

Singapore Actuarial Conference

22 - 26 November 2021



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Singapore's Covid 19 Experience

Beyond the Headlines

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Pineapple Advisors



OFFICIAL MEDIA PARTNER



Agenda



-  Background and Caveats
-  Types of Data Available
-  Singapore's experience in XX Charts
-  Vaccines – The Data Is In
-  Global Experience and Implications

Background and Caveats



-  Data is all Public Information
-  Primary source of data is MoH.gov.sg
-  Mix of 'Live tables' and Reports
-  Data 'comes and goes', updates and changes
-  Interpretation of Data challenges

Types of Data Available



Early focus on Number of Cases, split by



Source: Imported, Community, Dormitory



Citizenship: Citizens, PRs, Foreigners



Detection: Isolated, Surveillance



Age: 6-9 Age Bands from 0-11 to 80+



Evolved into Severity



Care Status: ICU, General Ward, In Isolation, Died



Treatment: Hospitalised, Oxygen, ICU (Stable), ICU (Critical)



Data from February 2020 to Nov 21

Singapore's Experience



Daily Update: covid19.moh.gov.sg

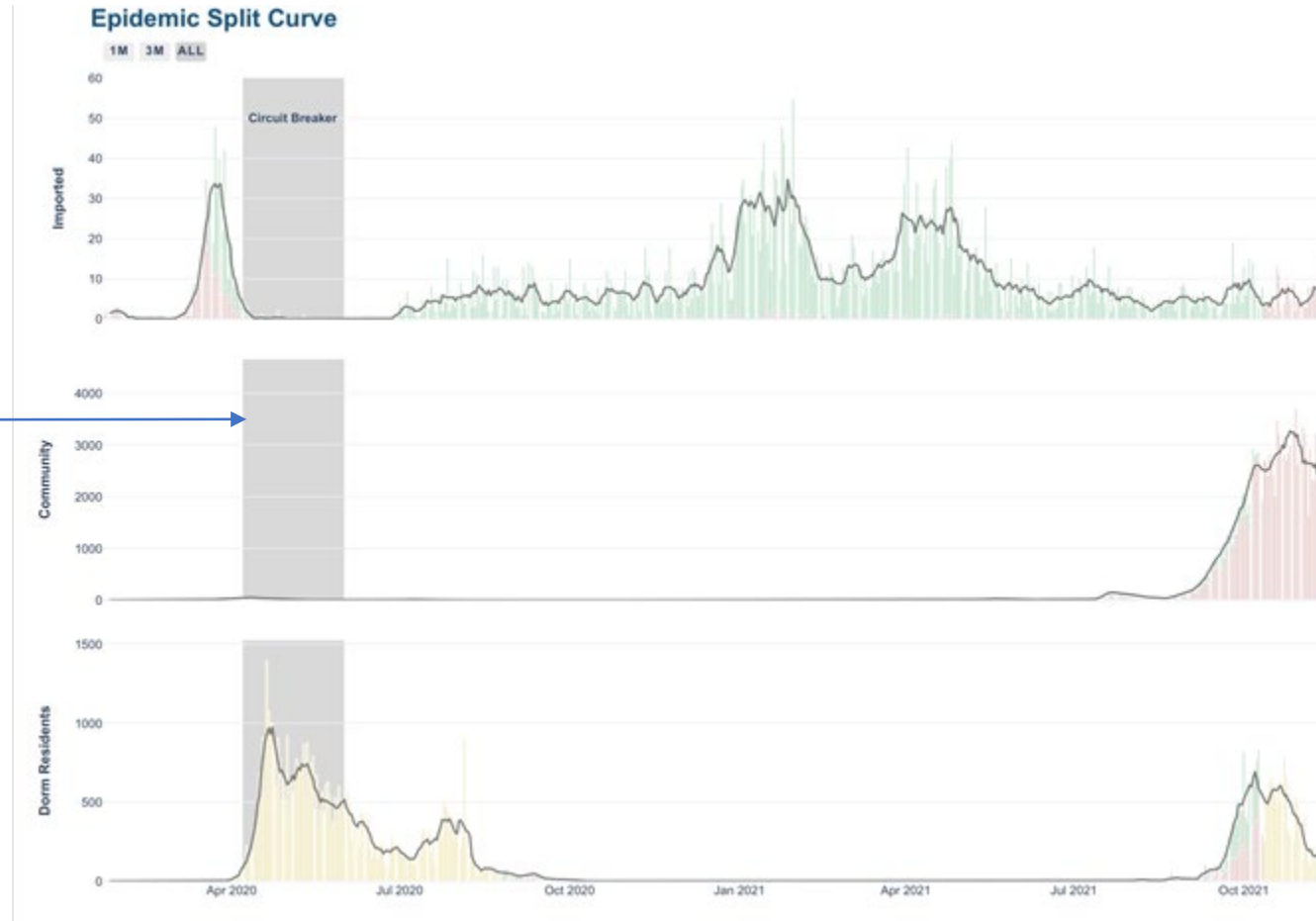


Singapore's Experience



Infection History

Circuit
Breaker

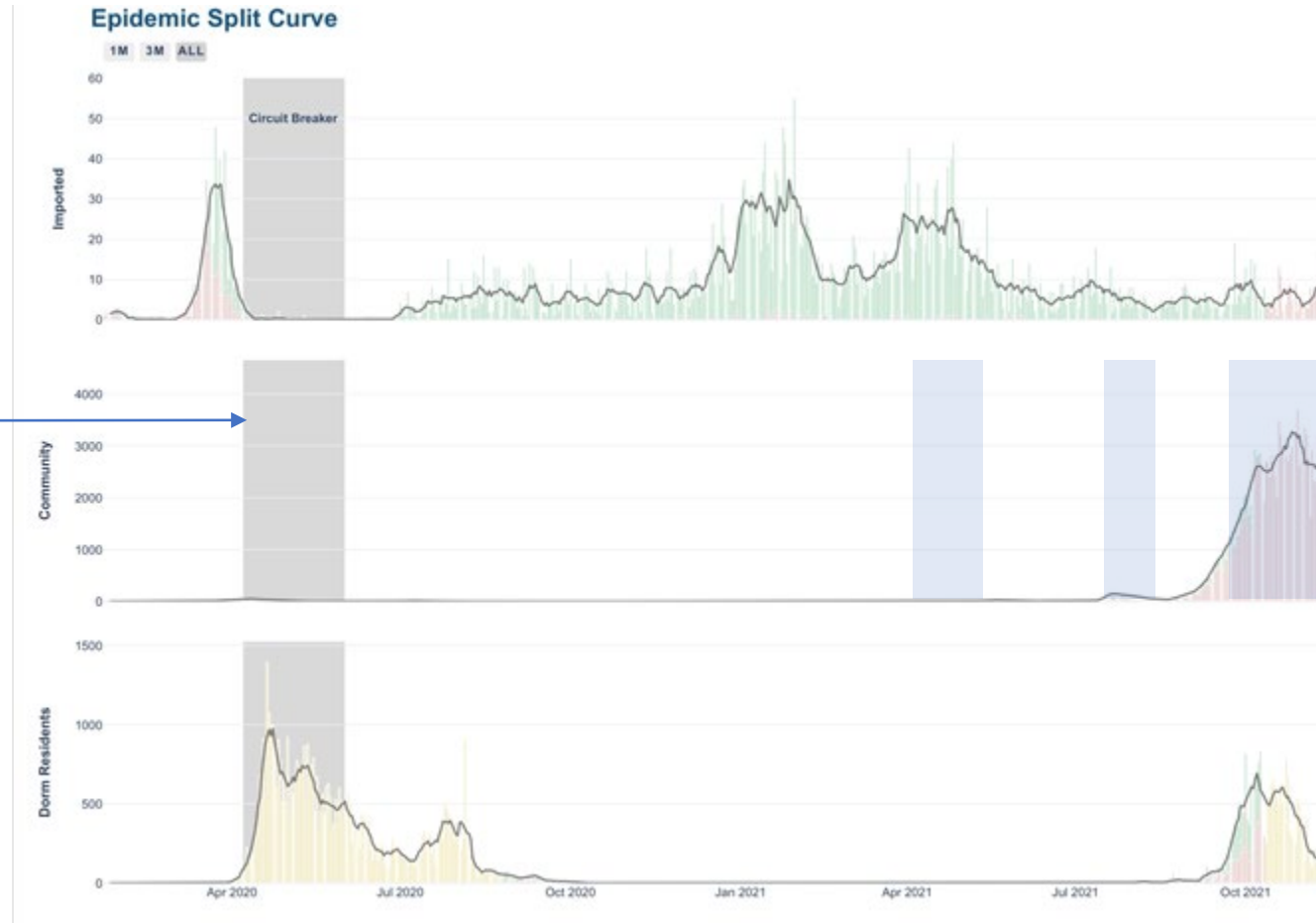


Singapore's Experience



Infection History

Circuit
Breaker



Subsequent
Restrictions

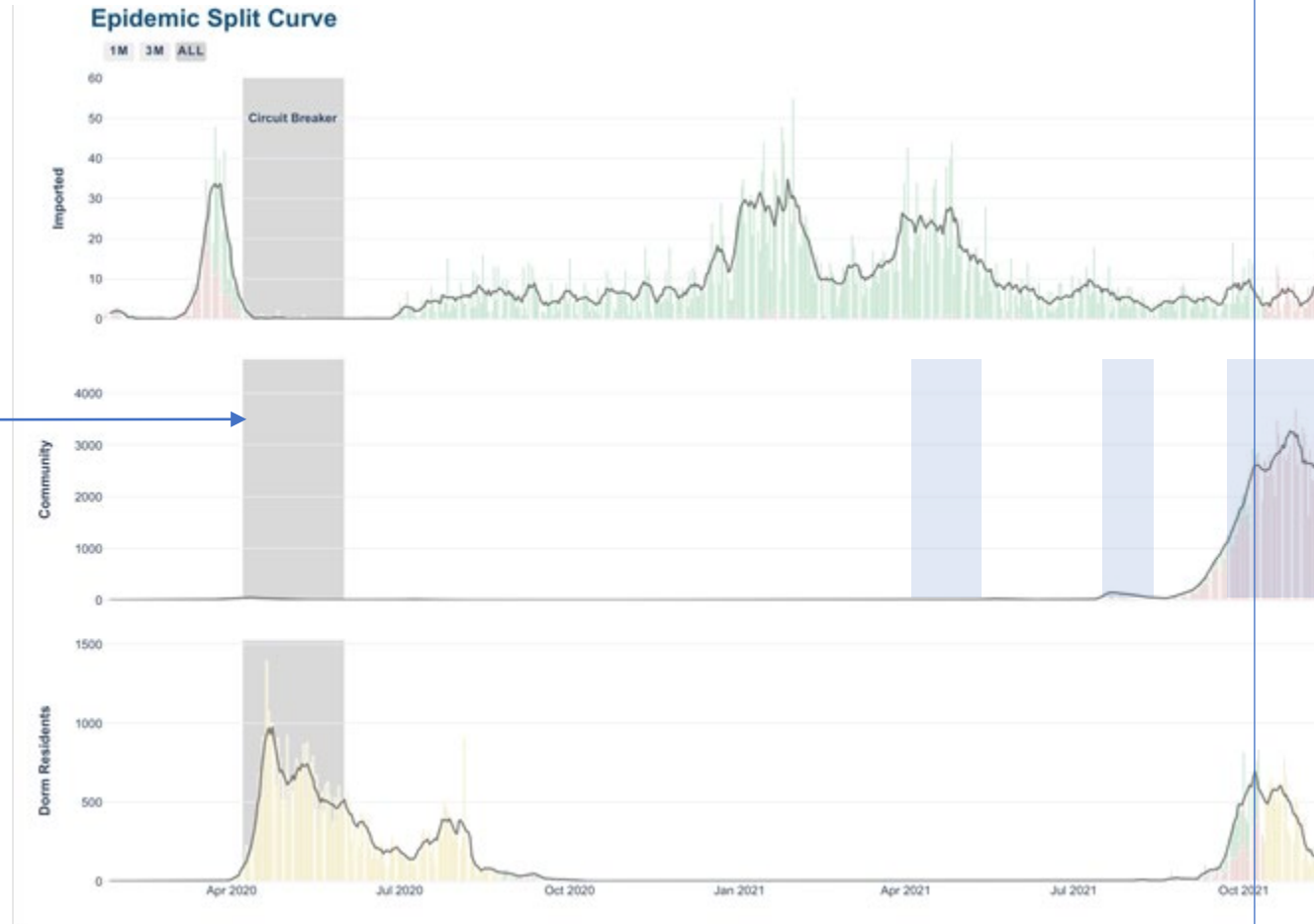
Singapore's Experience



Infection History

New Normal:
Endemic 9/10

Circuit
Breaker



Subsequent
Restrictions

Singapore's Experience



Daily Case Status



In Isolation



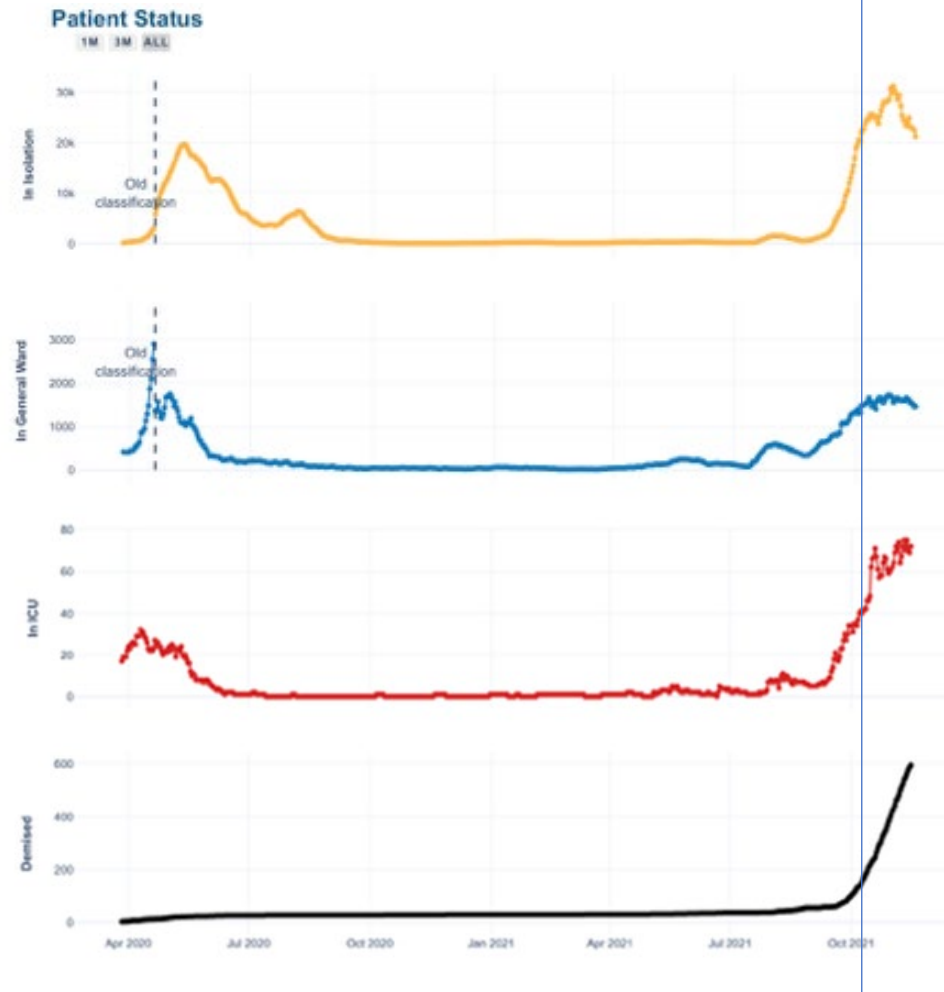
In General Ward



In ICU



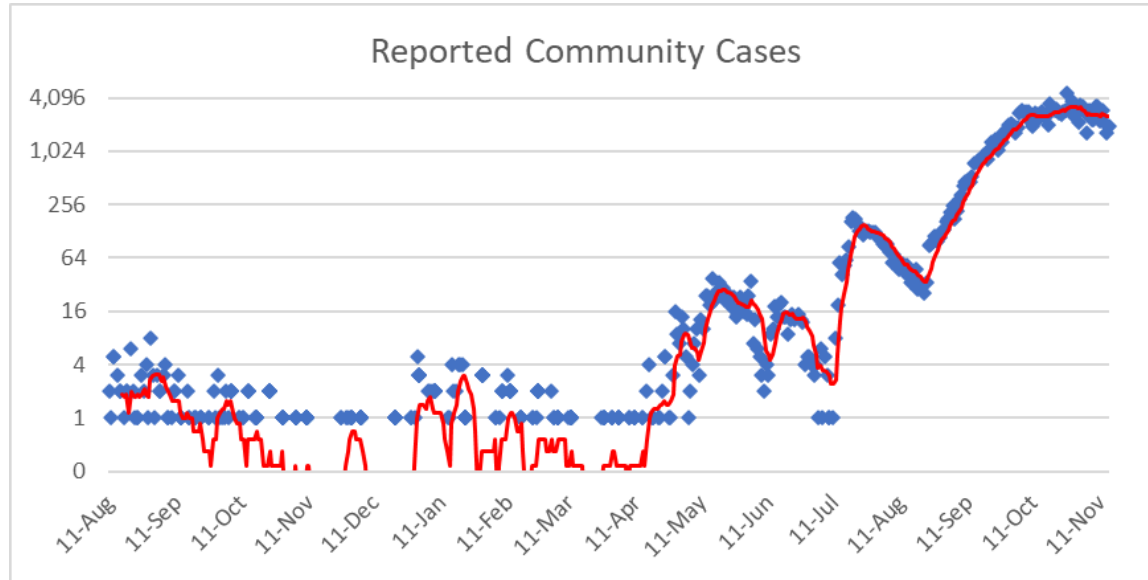
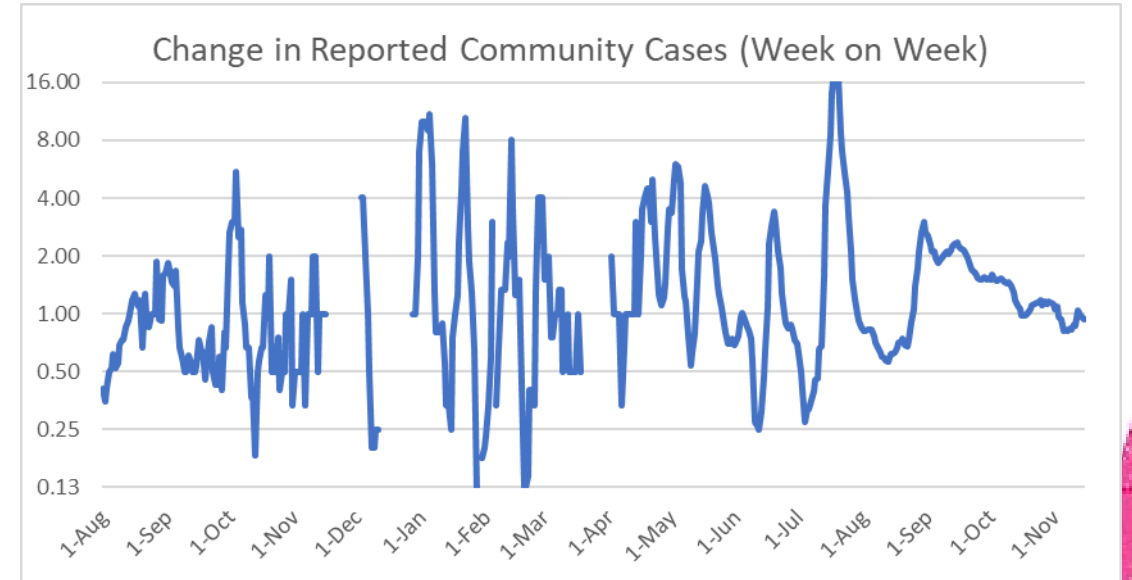
Demised



Singapore's Experience



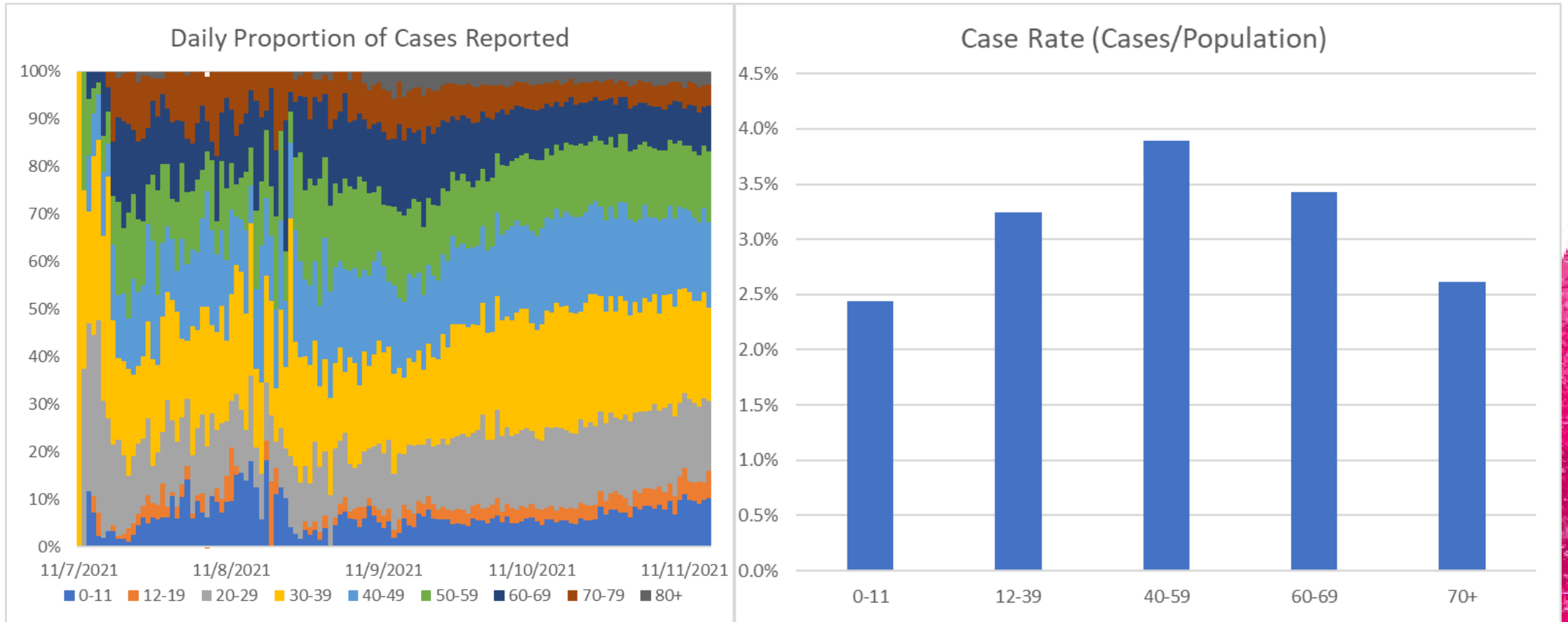
Number of Local Cases



Singapore's Experience



Number of Local Cases by Age

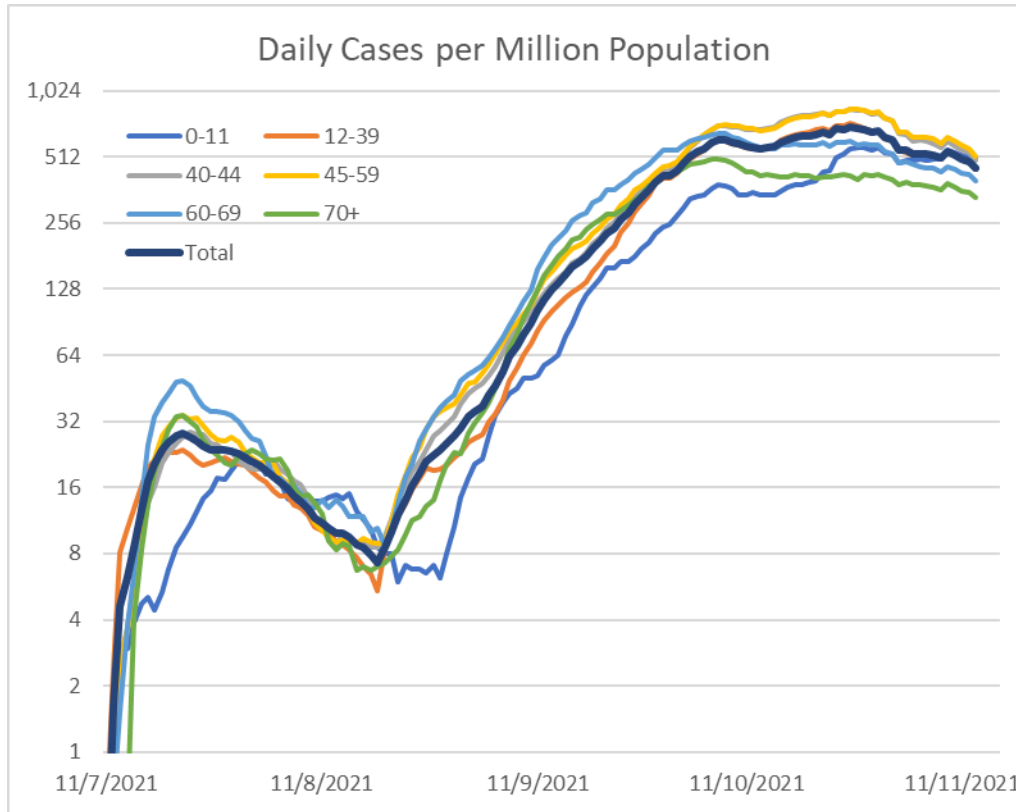
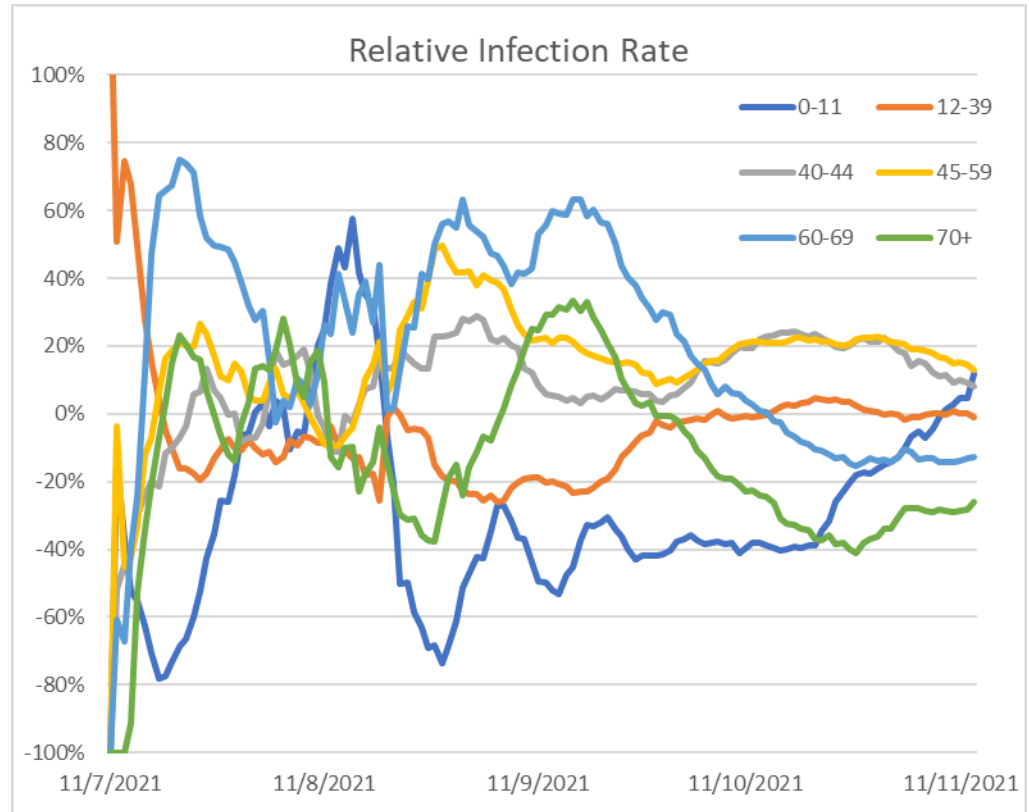


11 Jul 21 – 16 Nov 21

Singapore's Experience



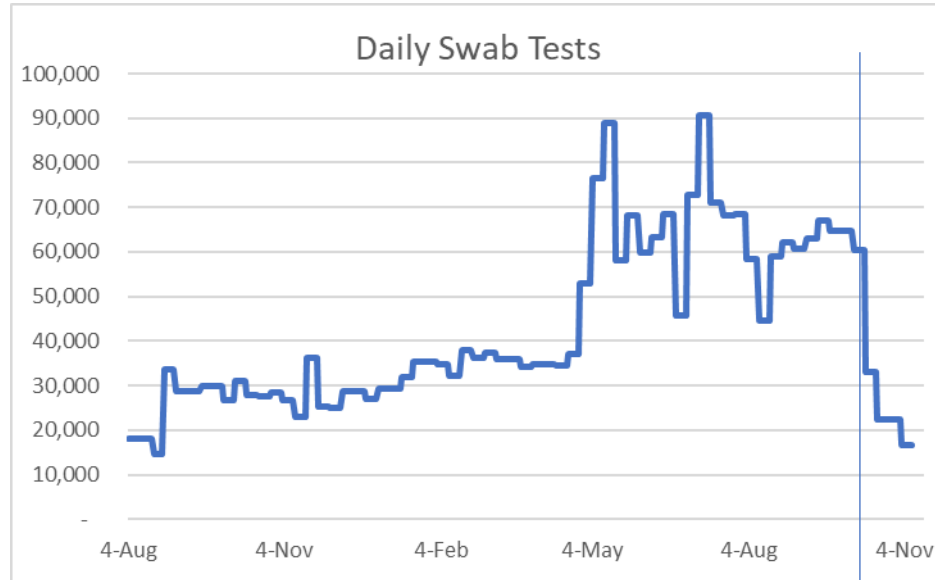
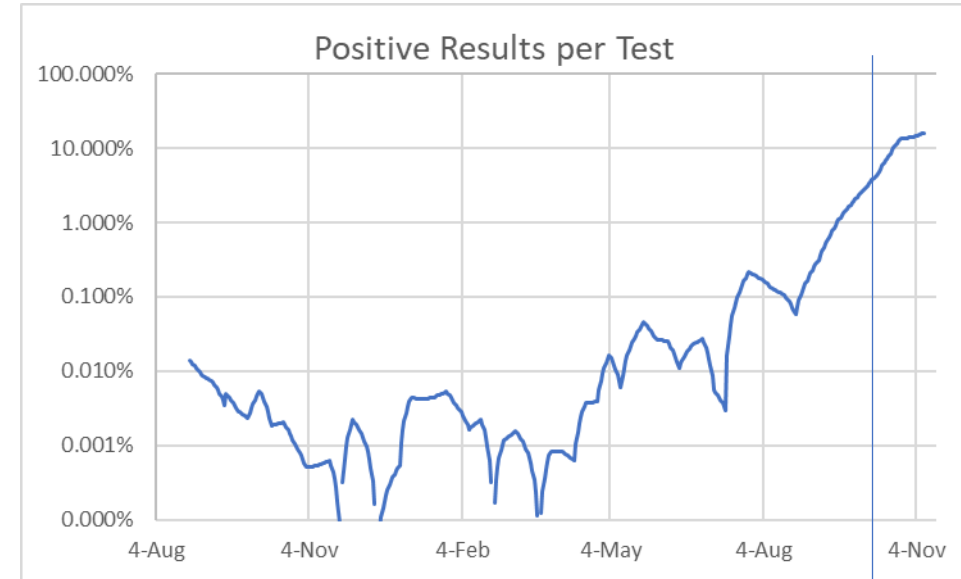
Number of Local Cases by Age



Singapore's Experience



Testing for Covid

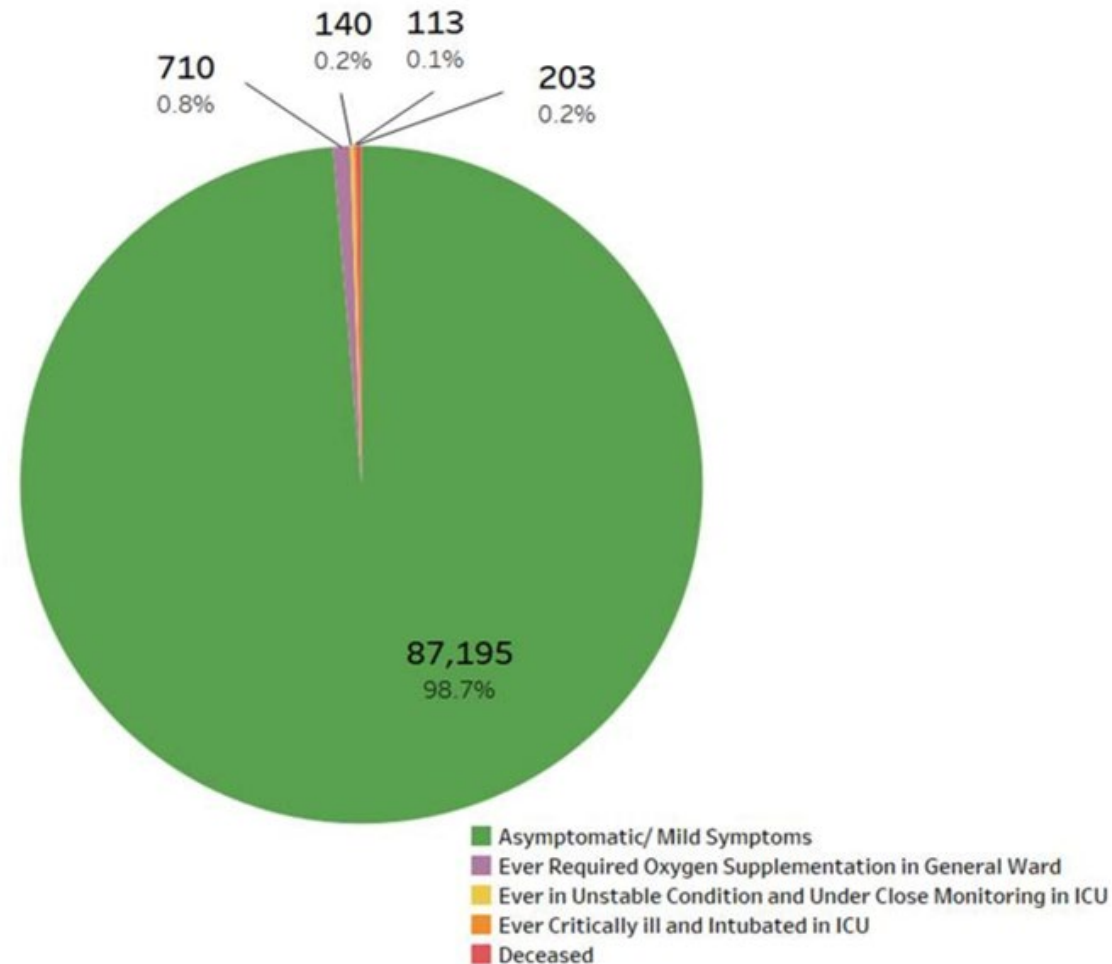


New Normal:
Endemic 9/10

Singapore's Experience



Recent Local Cases by Severity

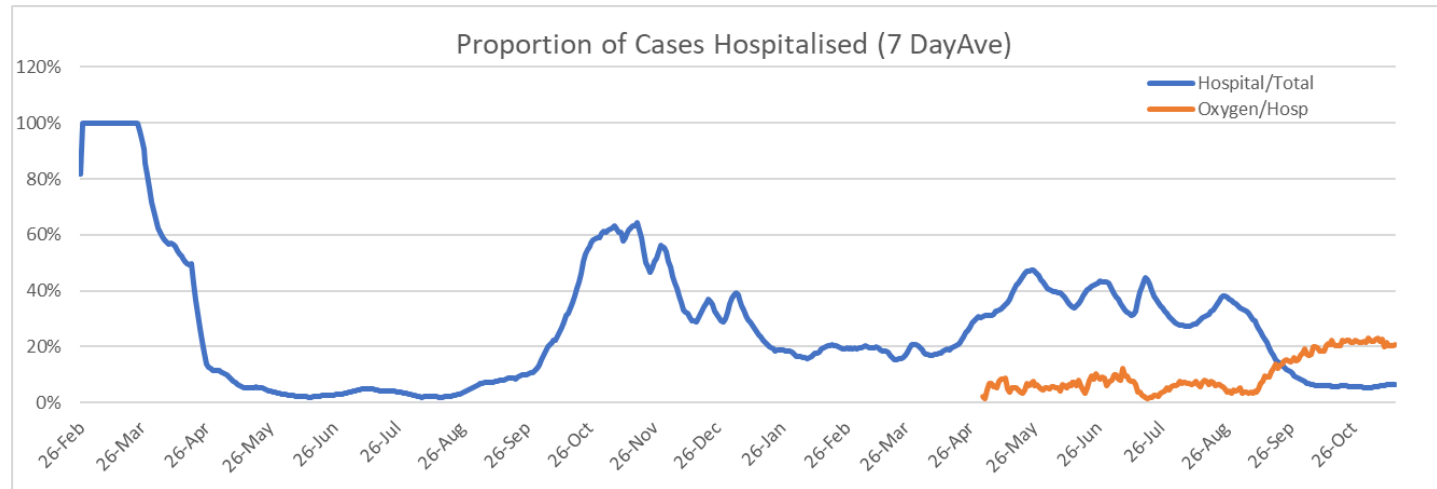
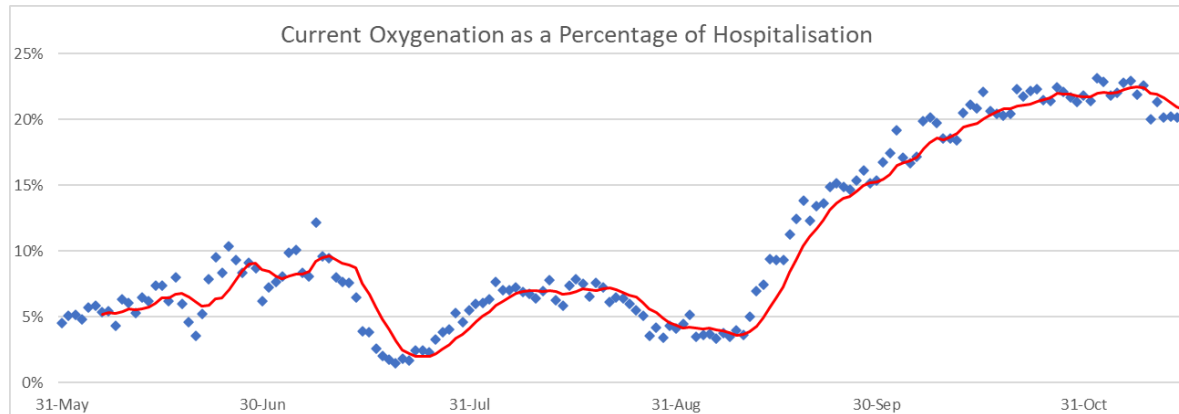
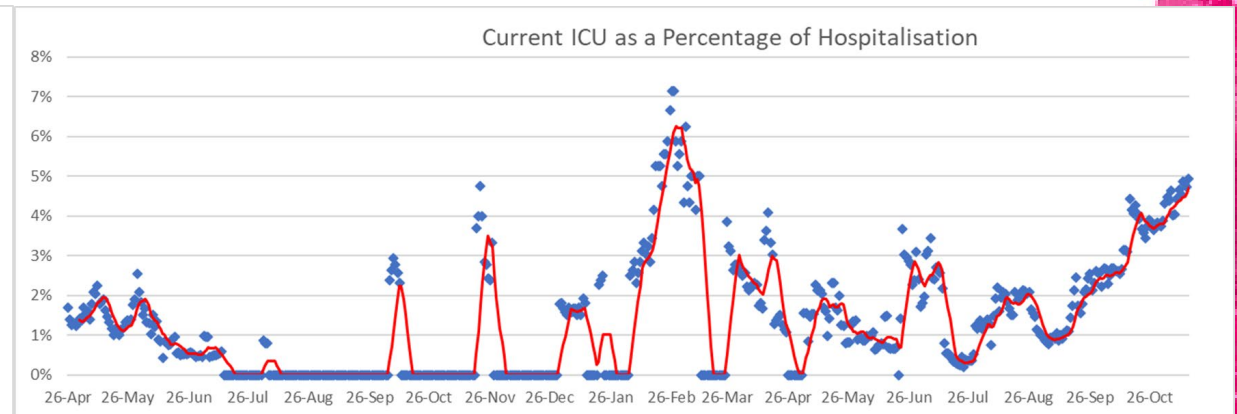


19 Oct 21 –
15 Nov 21

Singapore's Experience



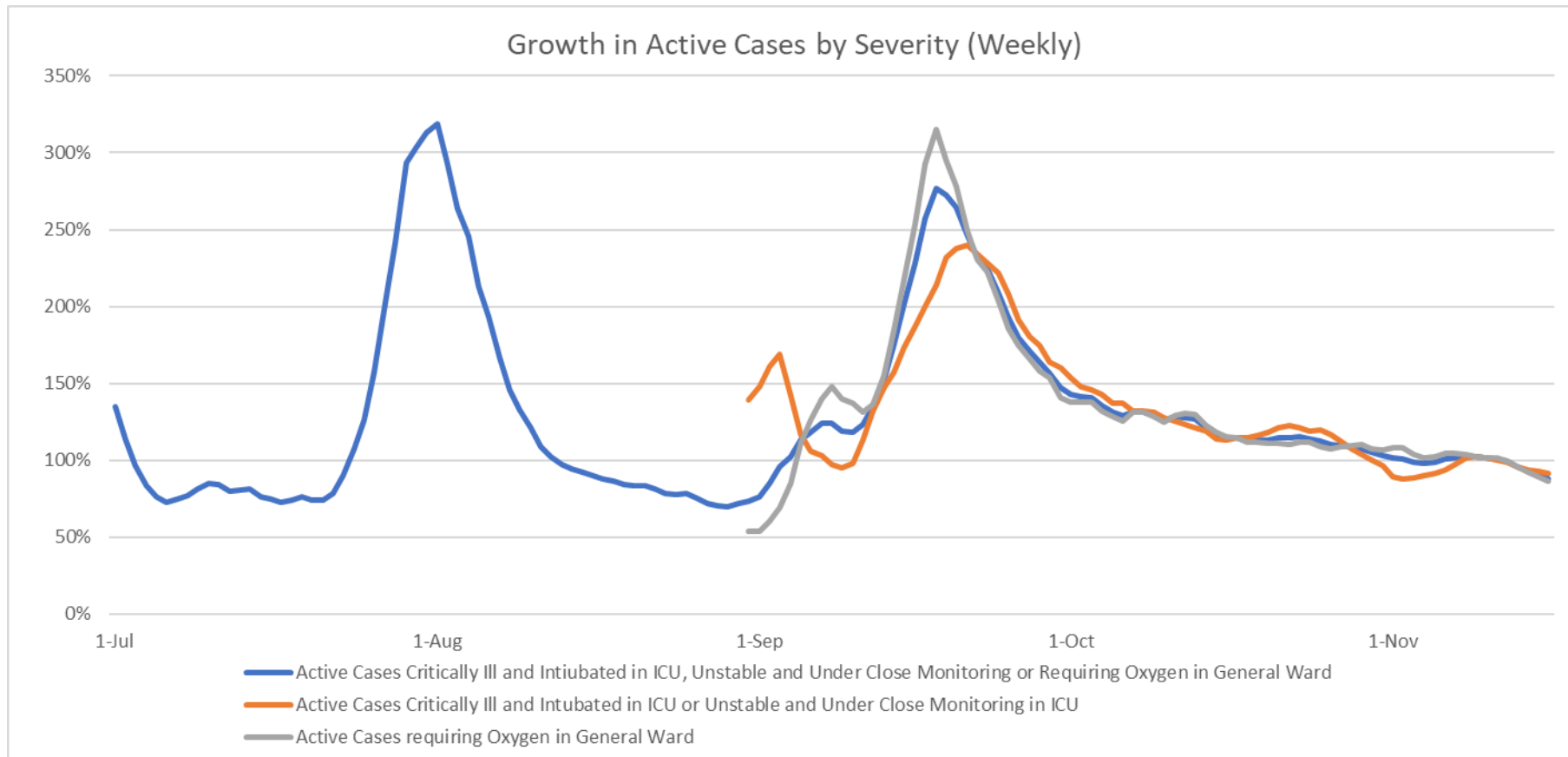
Changes in Severity



Singapore's Experience



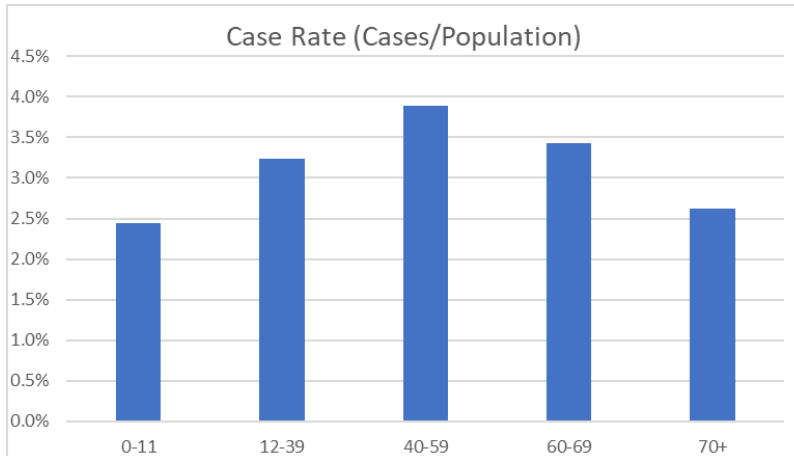
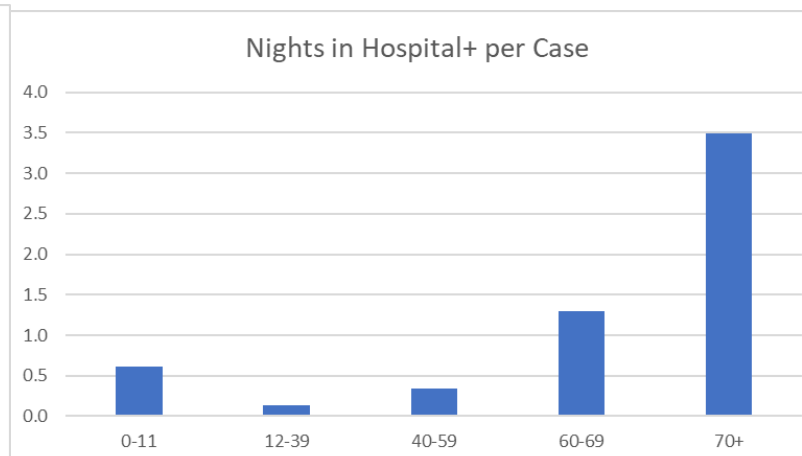
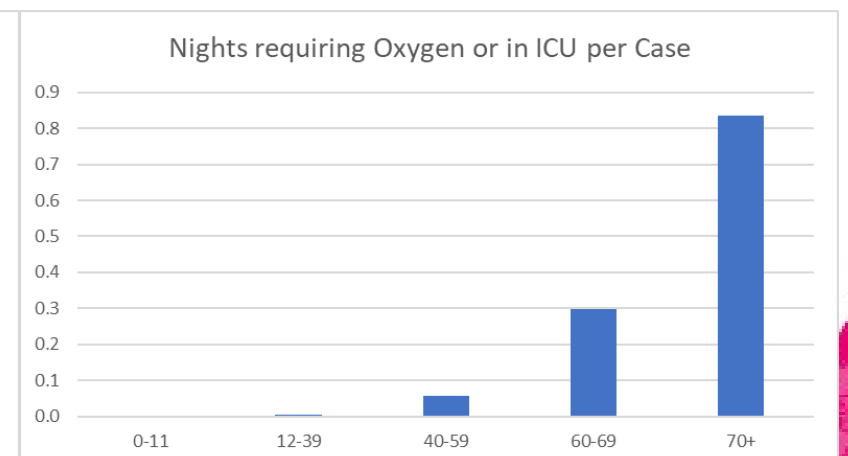
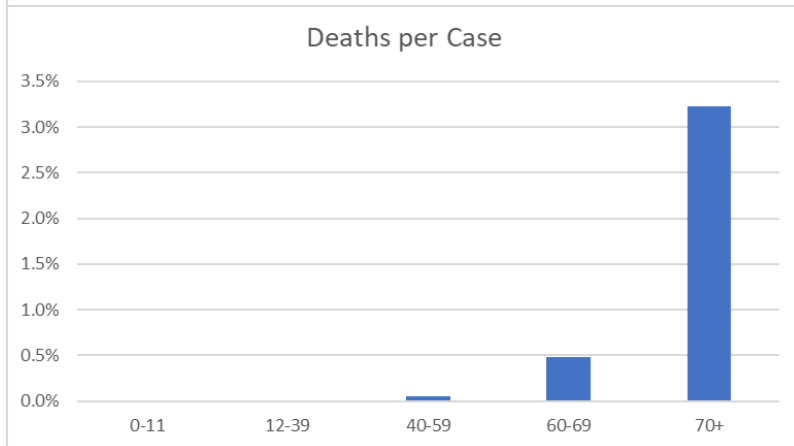
Changes in Severity



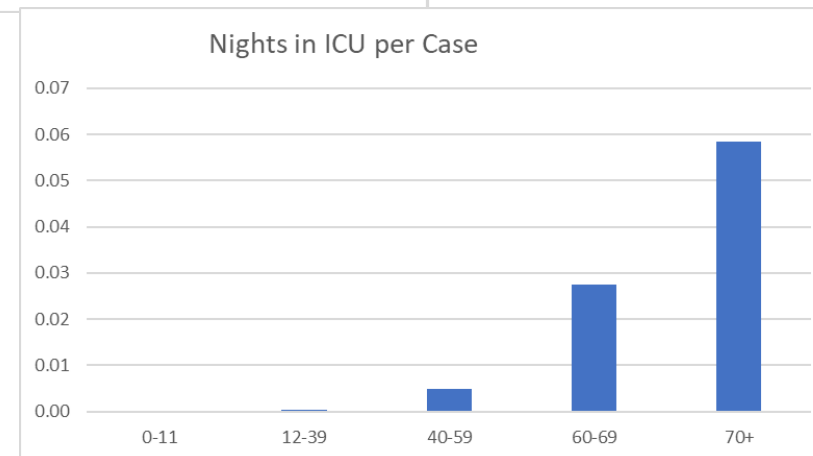
Singapore's Experience



Severity by Age



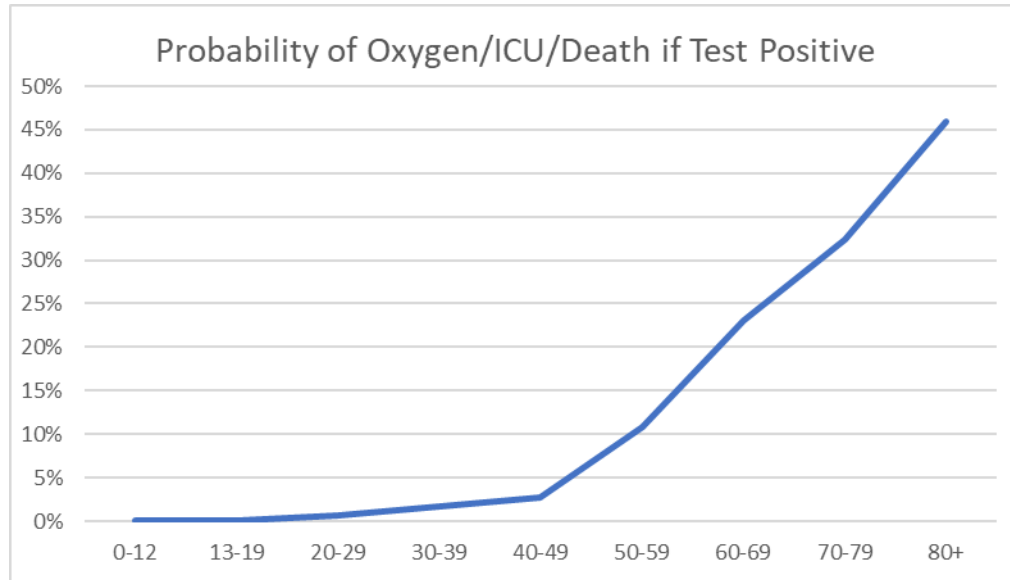
12 Aug 21 –
16 Nov 21



Singapore's Experience



Changes in Severity Development by Age

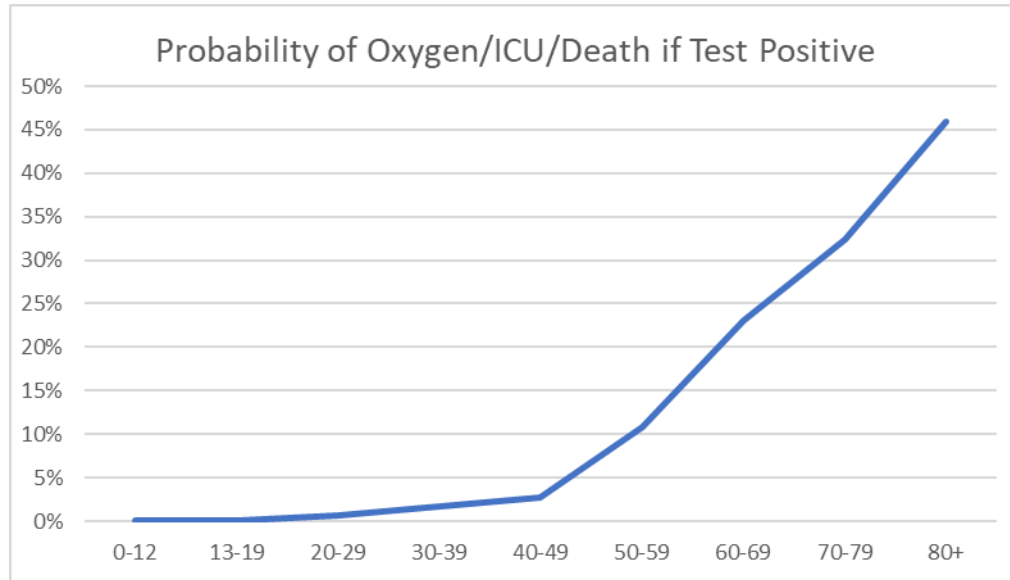
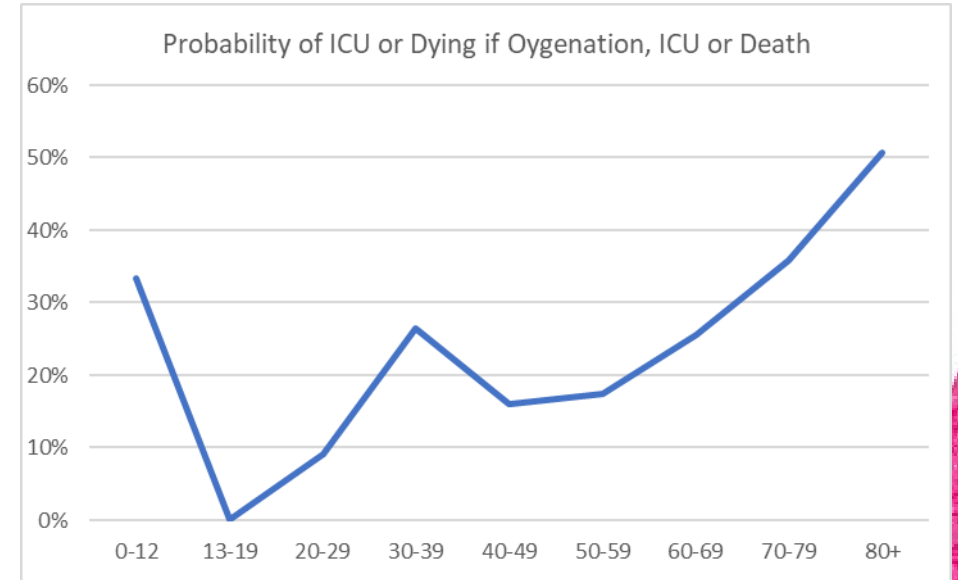


1 May 21 –
31 Oct 21

Singapore's Experience



Changes in Severity Development by Age

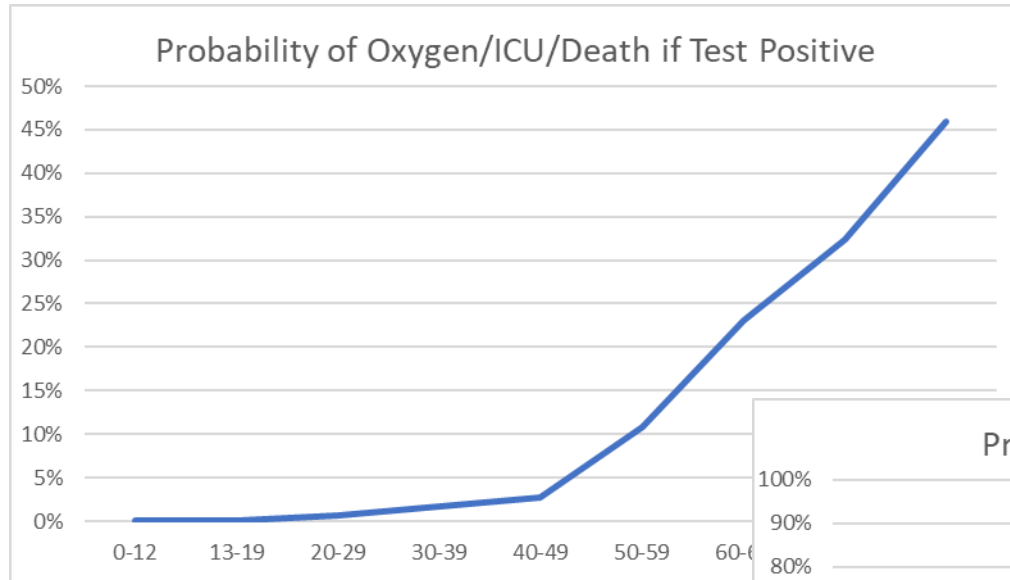
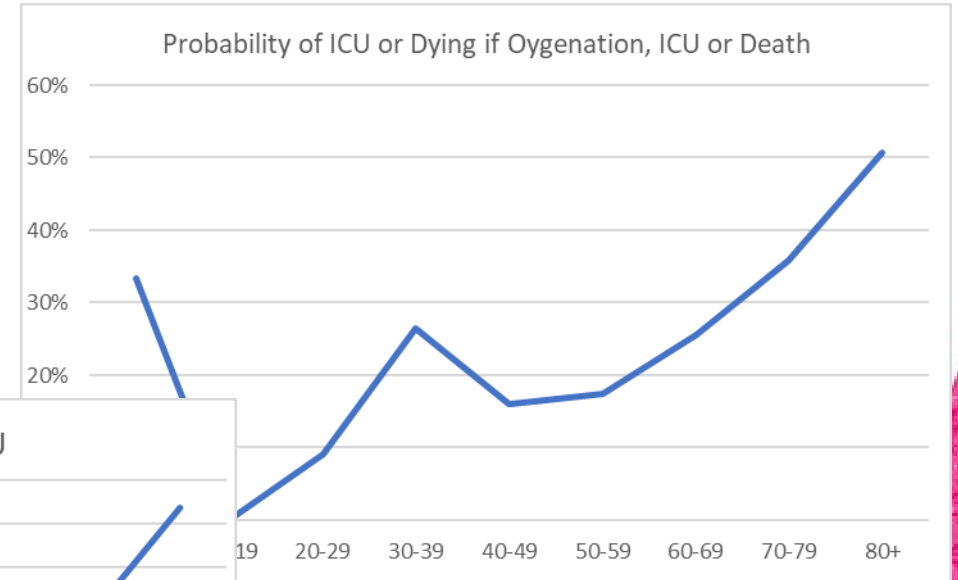
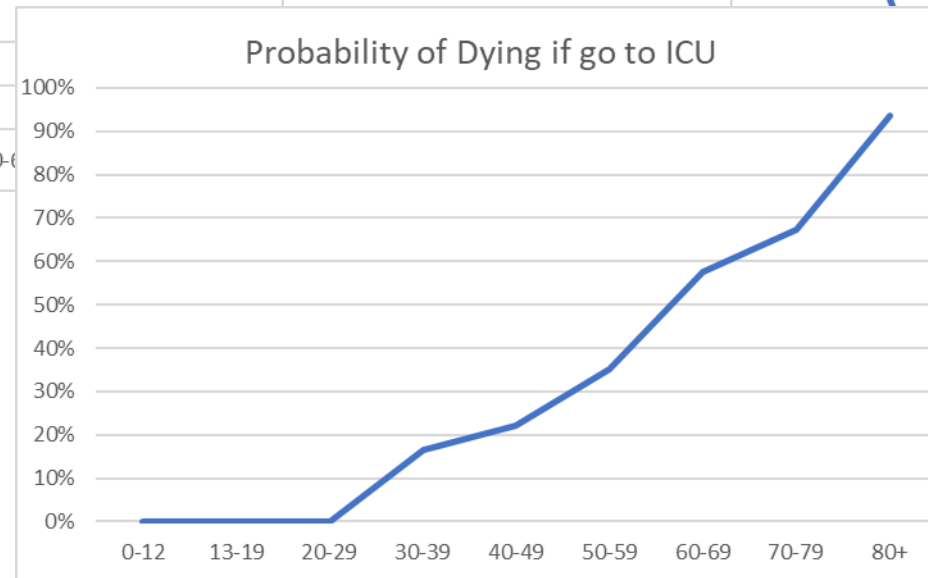


1 May 21 –
31 Oct 21

Singapore's Experience



Changes in Severity Development by Age

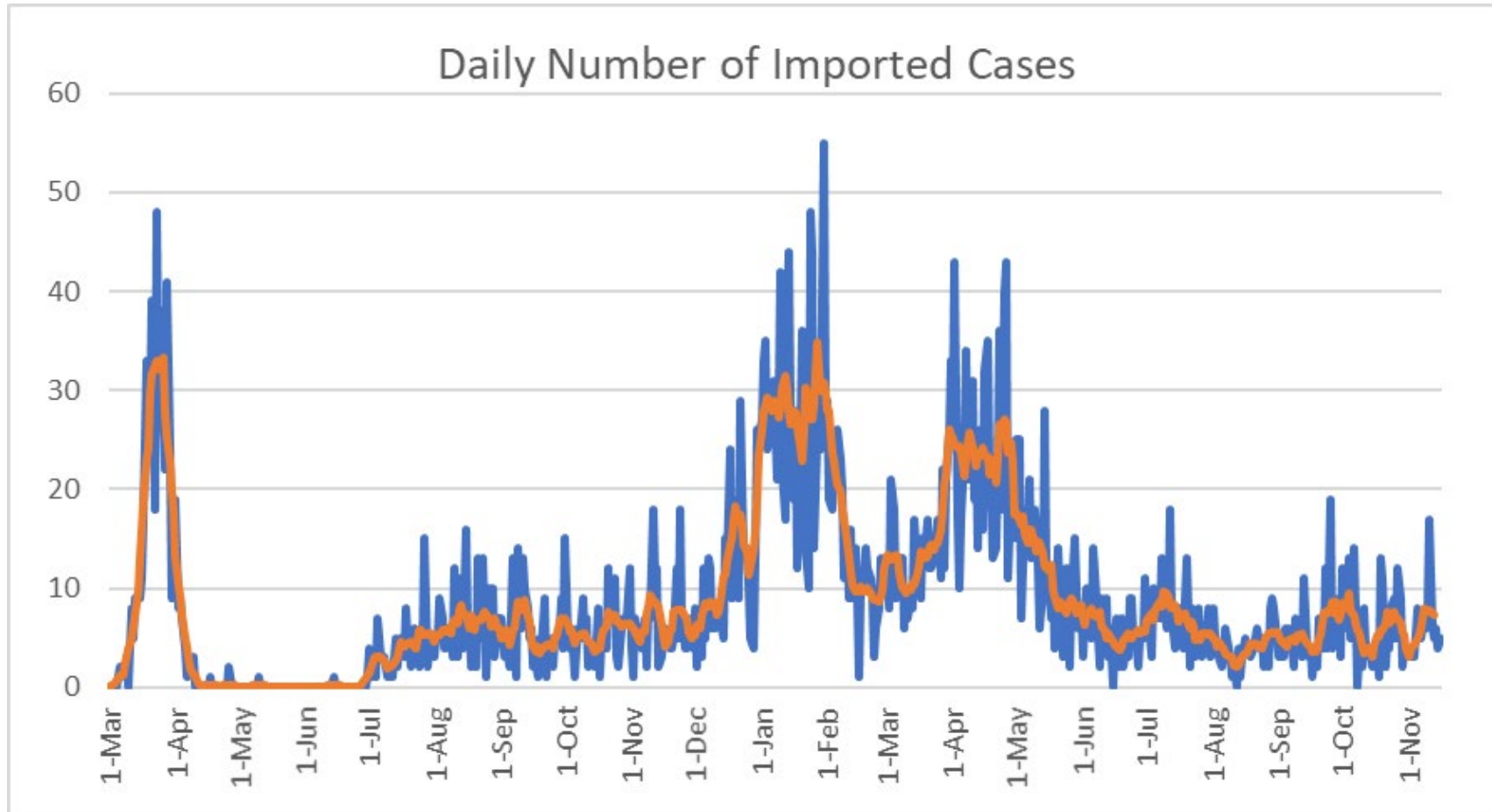


1 May 21 –
31 Oct 21

Singapore's Experience



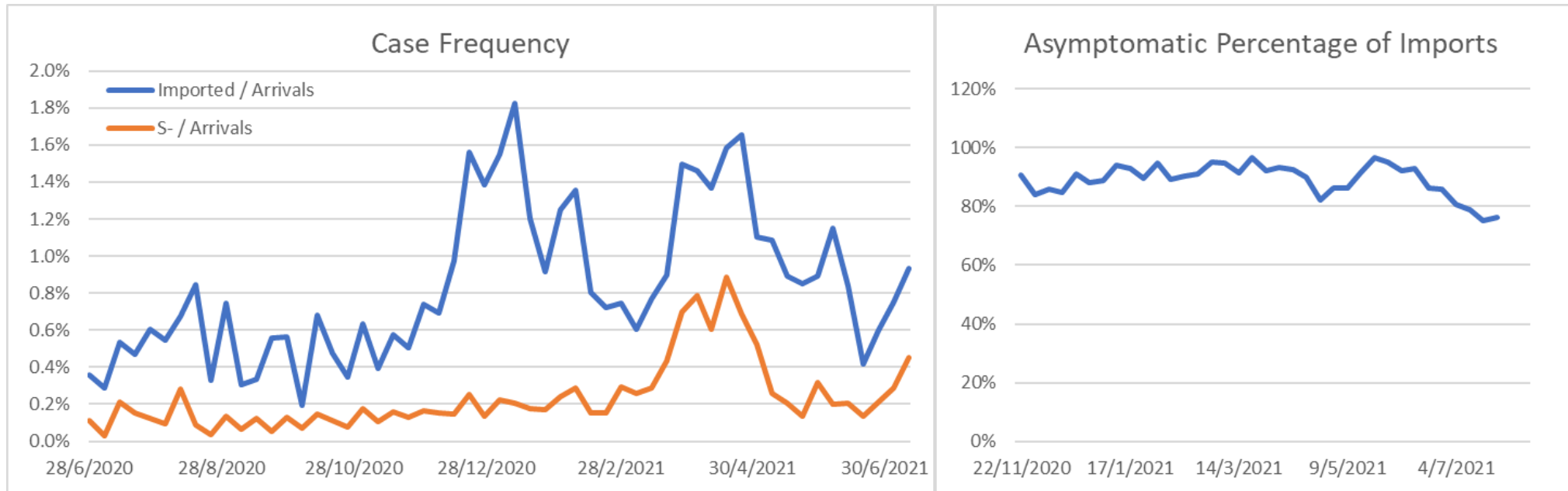
Imported Cases



Singapore's Experience



Imported Cases

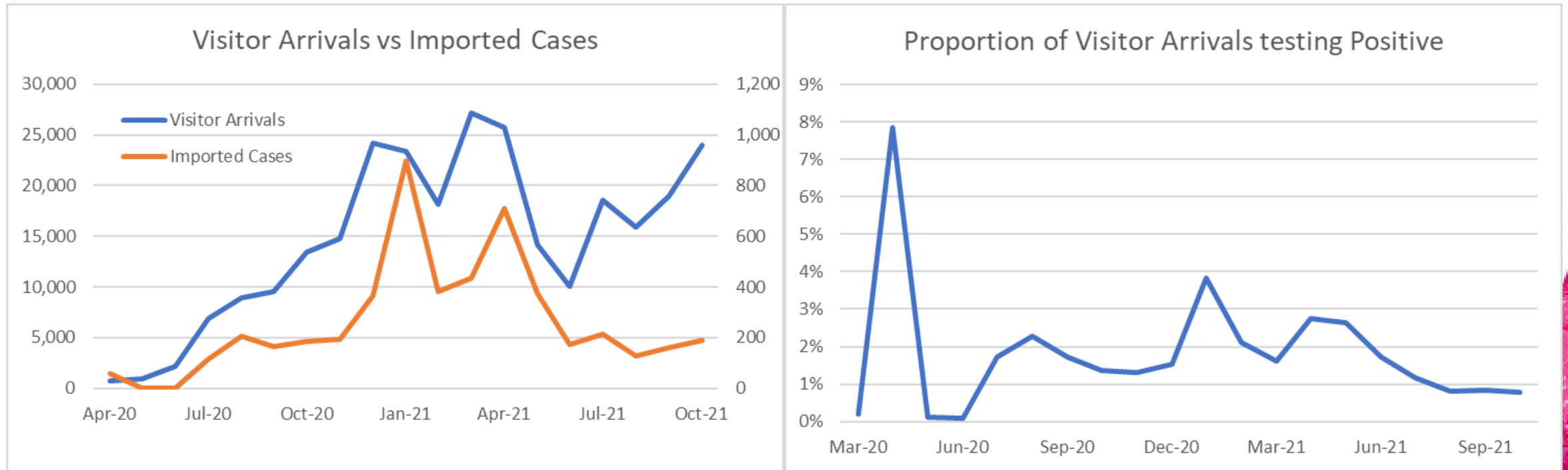


MoH Data

Singapore's Experience



Imported Cases



STB Arrivals Data

Vaccines – The Data Is In



Most divisive topic in recent years?



Vaccines – The Data Is In



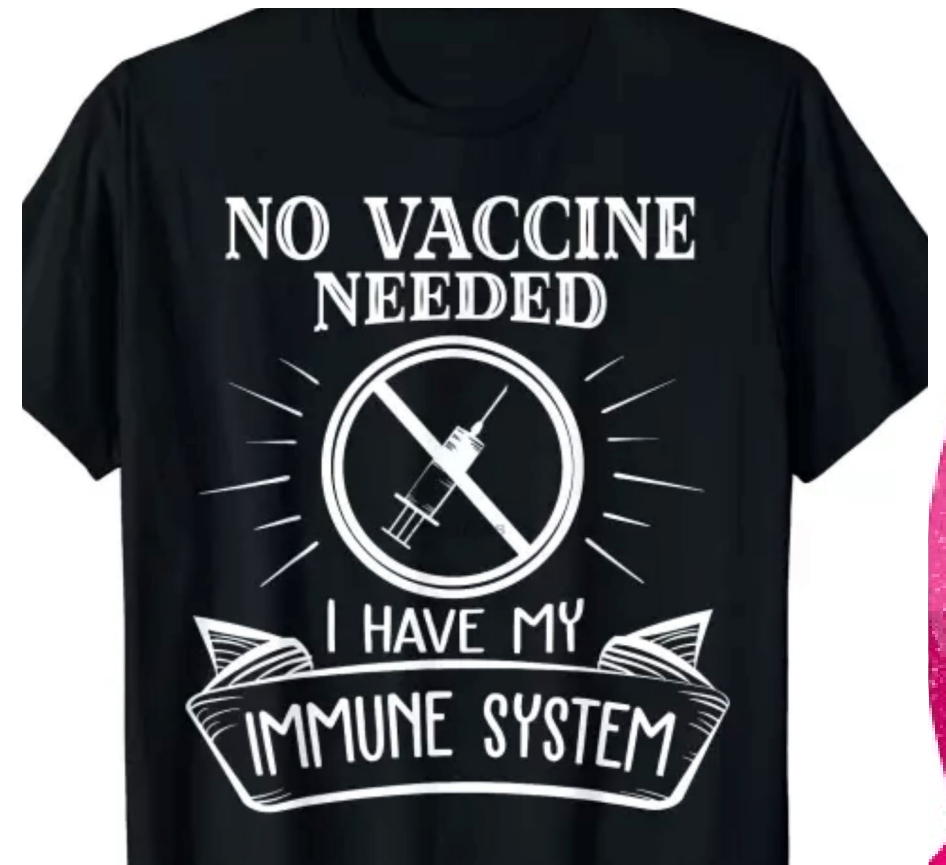
Vaccine hesitancy: Concerned about Rapid Approvals



Vaccines – The Data Is In



Vaccine hesitancy: Don't think it is needed



Vaccines – The Data Is In



Vaccine hesitancy: Don't like being told what to do



Vaccines – The Data Is In



Vaccine hesitancy: Side Effects?



Vaccines – The Data Is In



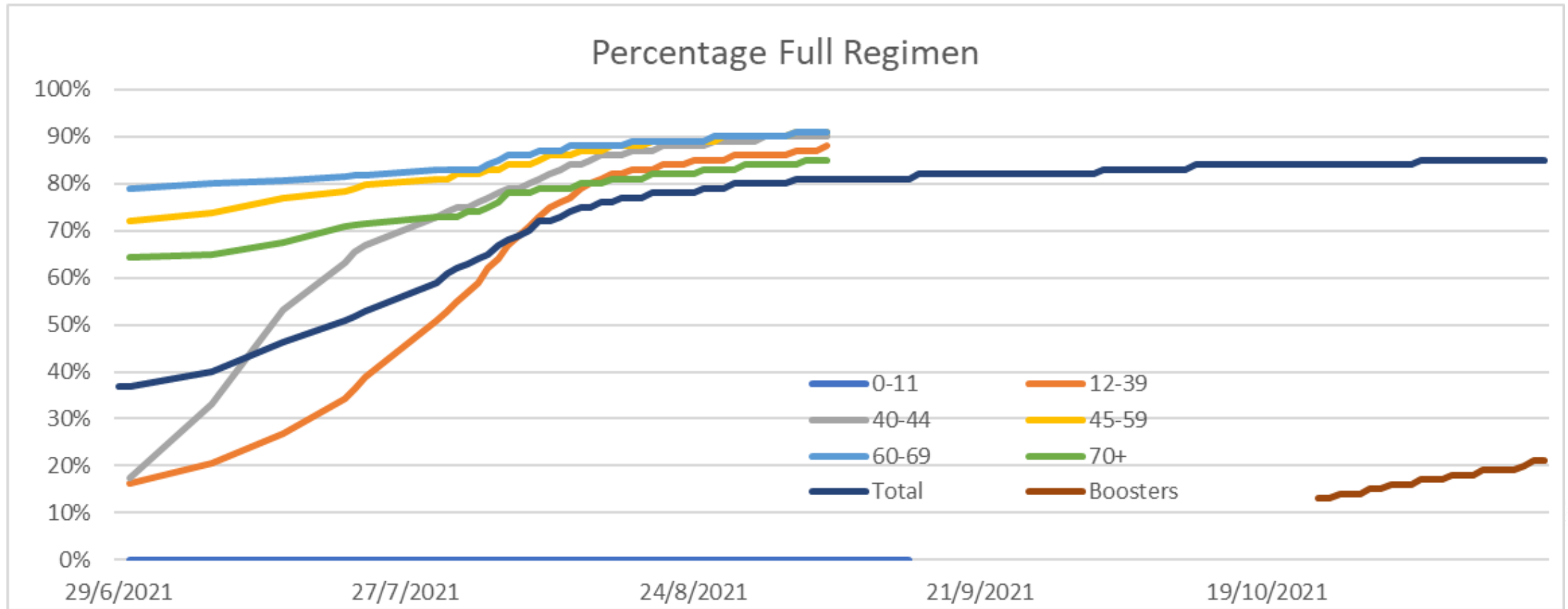
Some are very Pro Vaccine



Vaccines – The Data Is In



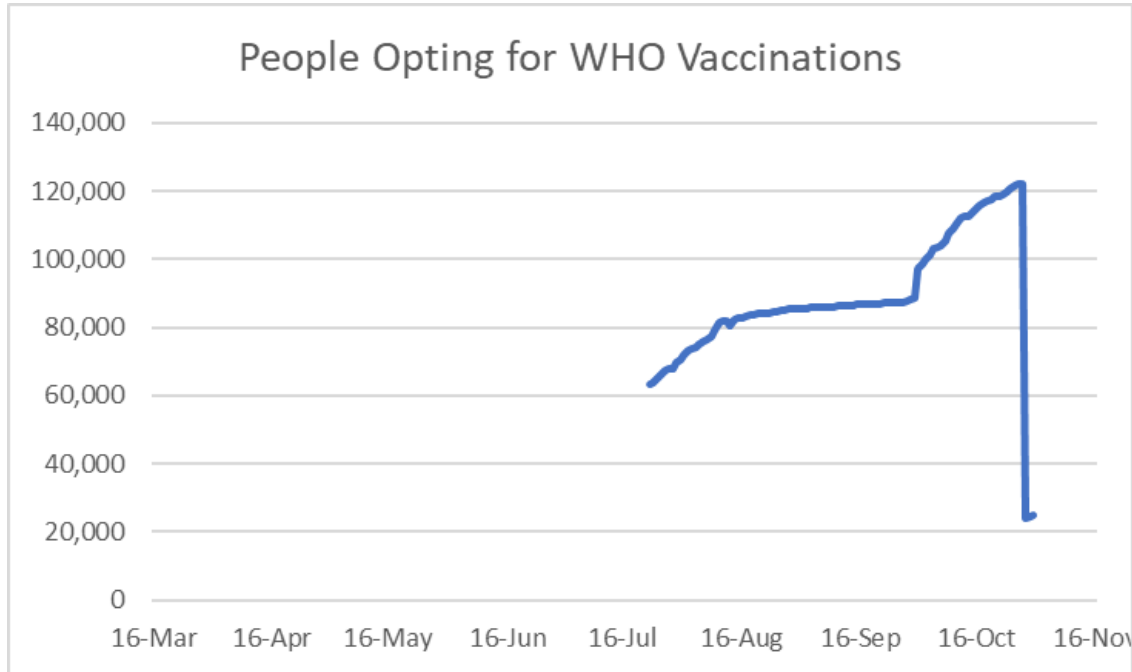
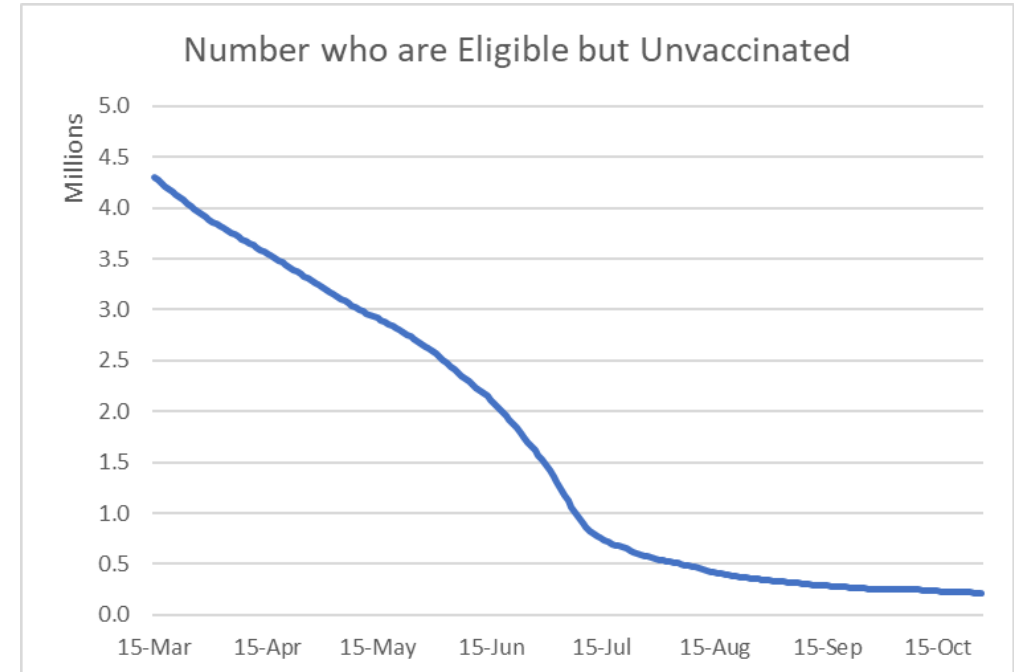
Singapore has high levels of vaccination



Vaccines – The Data Is In



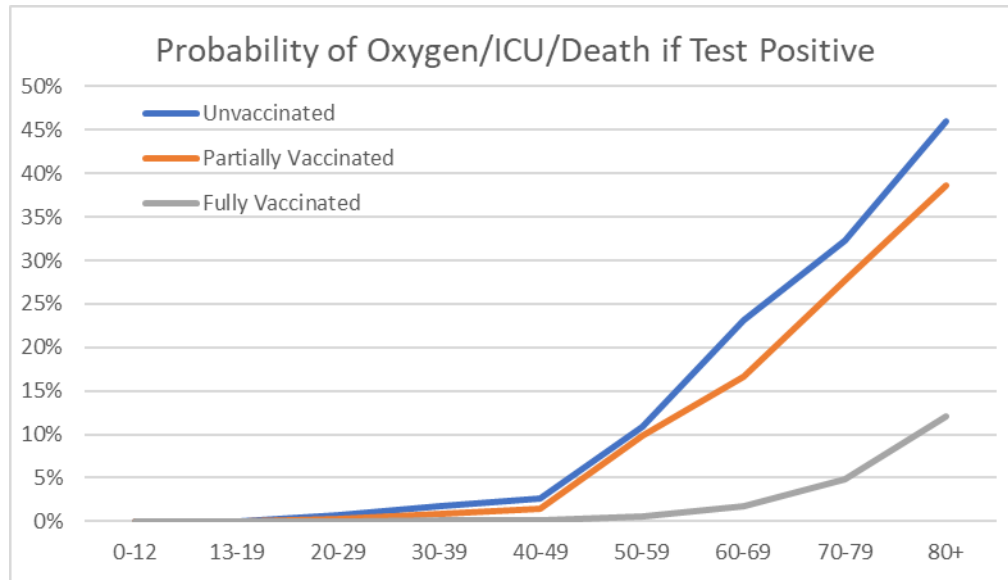
... but still significant hesitancy



Vaccines – The Data Is In



Vaccines having a significant impact on Severe Illness...

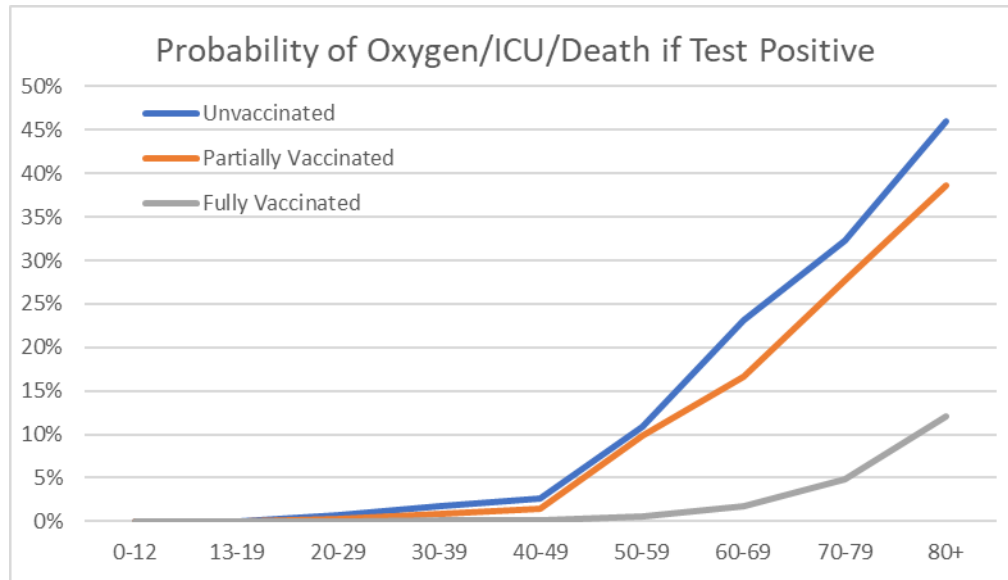
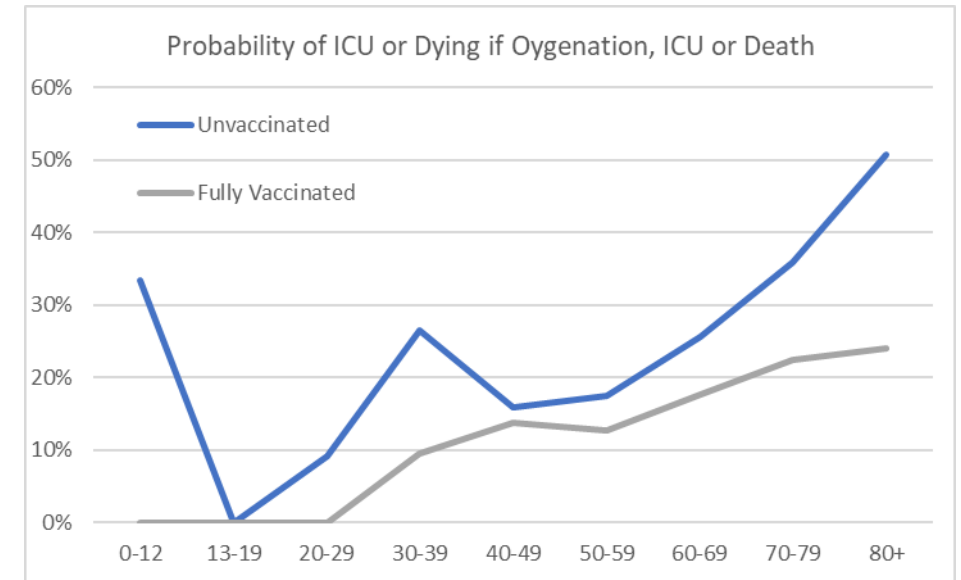


1 May 21 –
31 Oct 21

Vaccines – The Data Is In



Vaccines having a significant impact on Severe Illness....

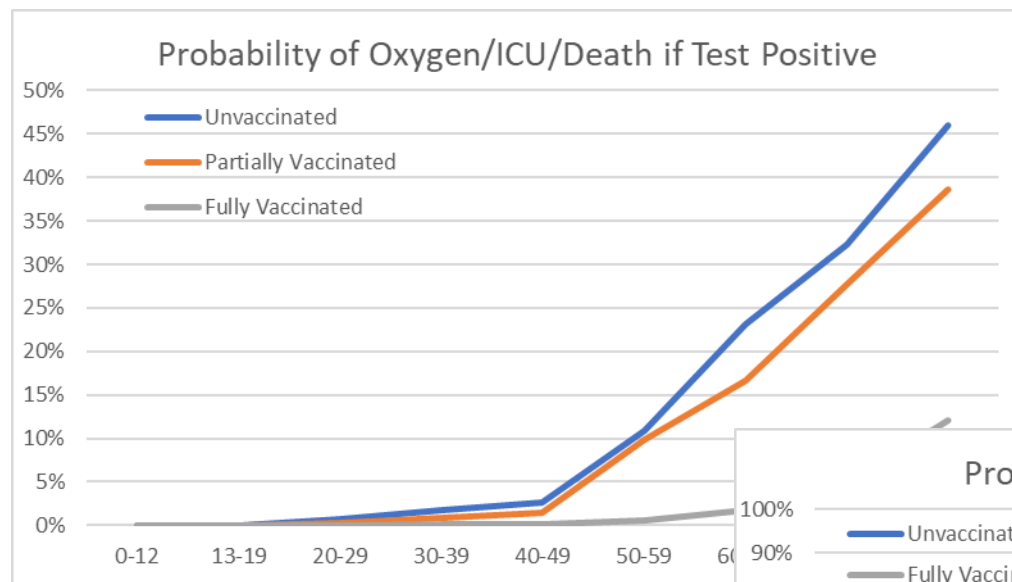
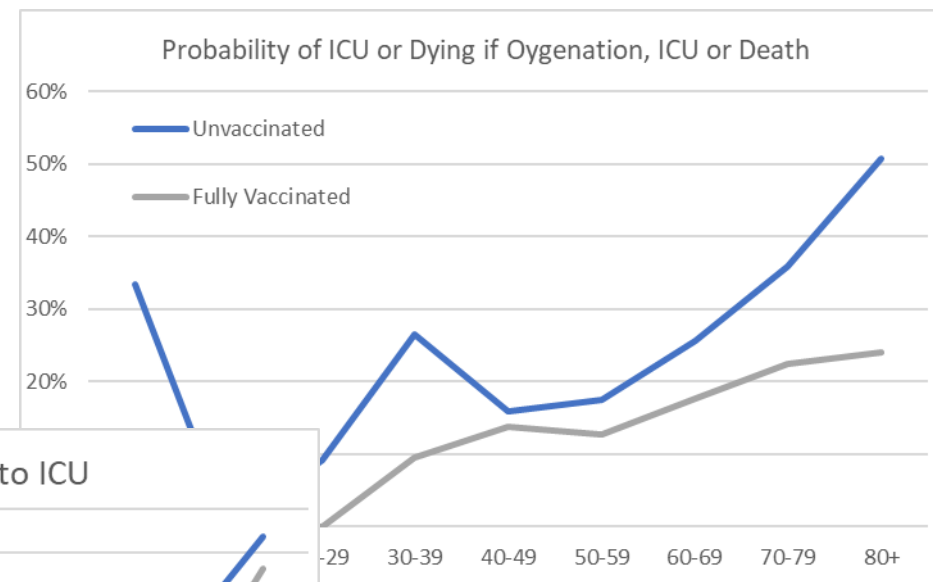
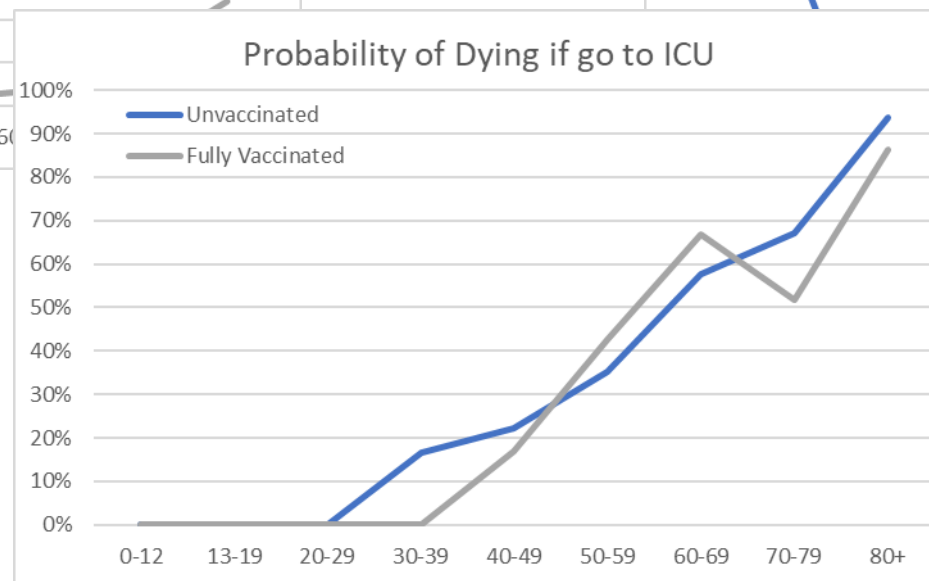


1 May 21 –
31 Oct 21

Vaccines – The Data Is In



Vaccines having a significant impact on Severe Illness...

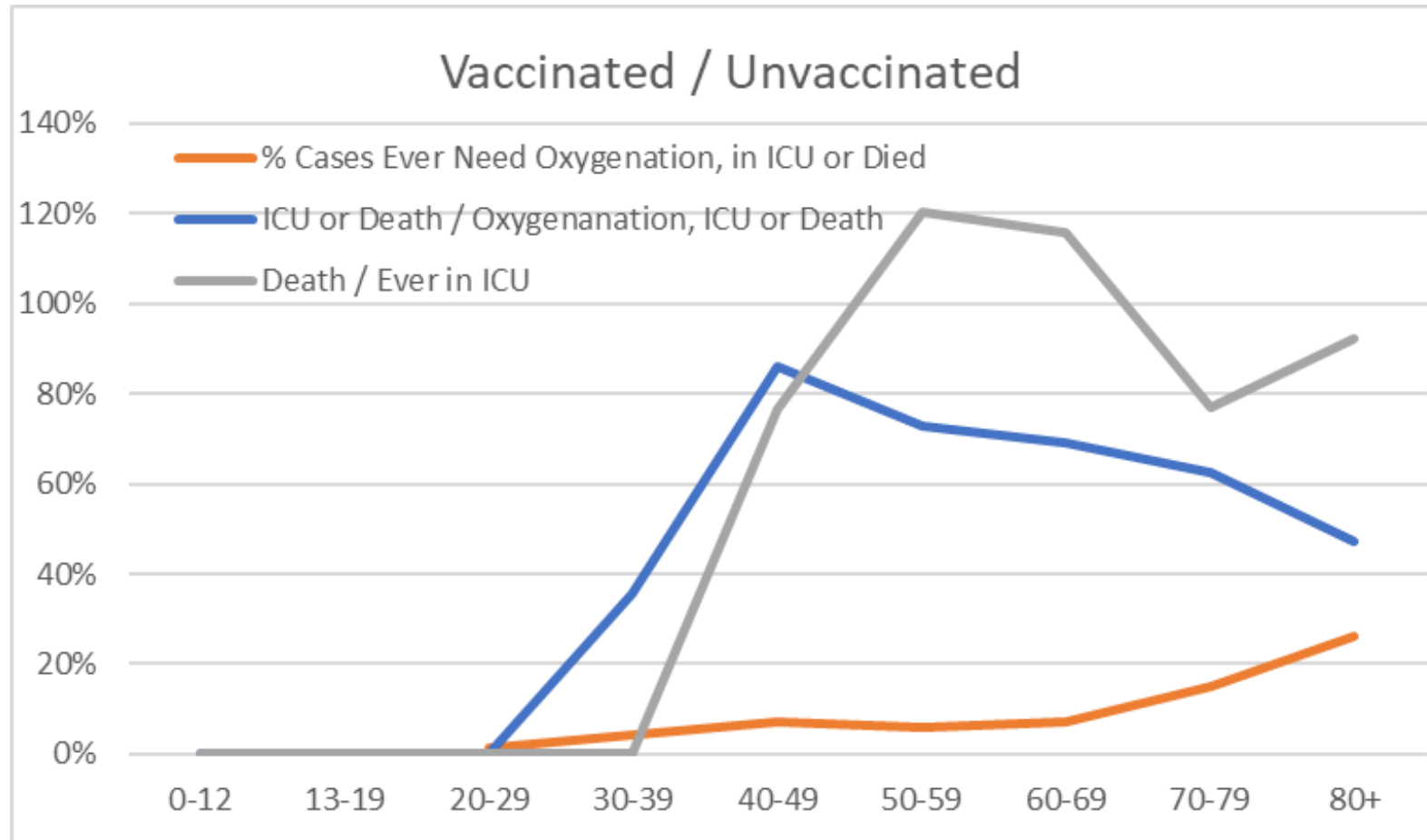


1 May 21 –
31 Oct 21

Vaccines – The Data Is In



Vaccines having a significant impact on Severe Illness...

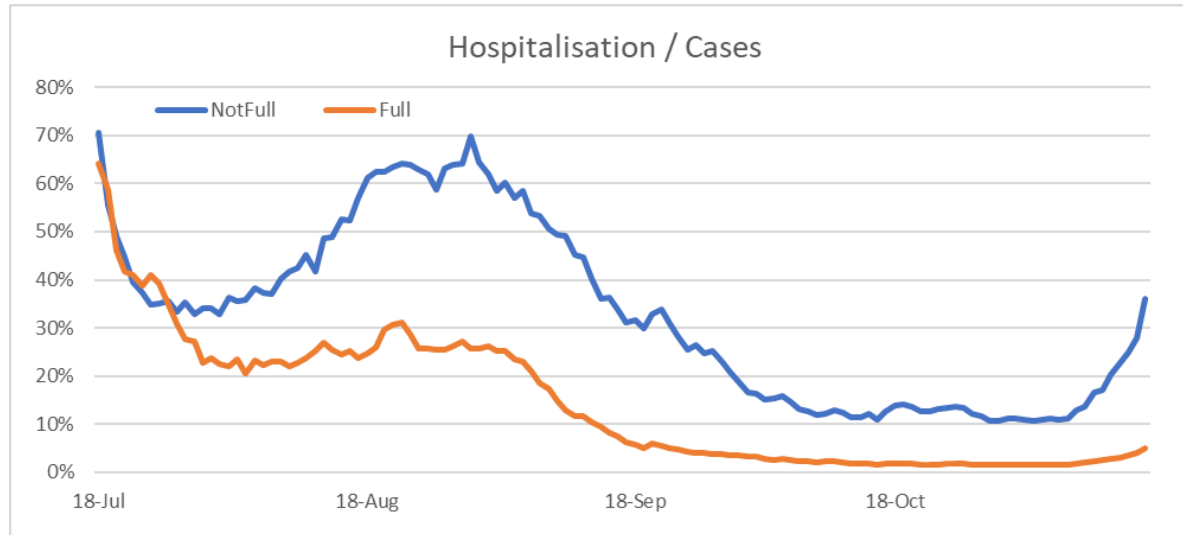
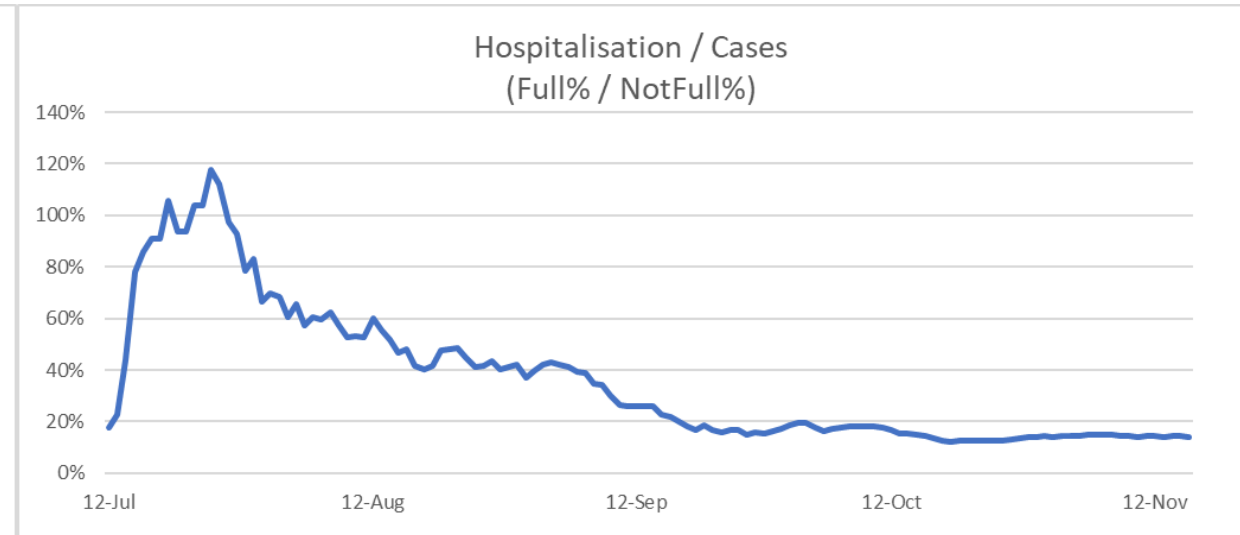


1 May 21 –
31 Oct 21

Vaccines – The Data Is In



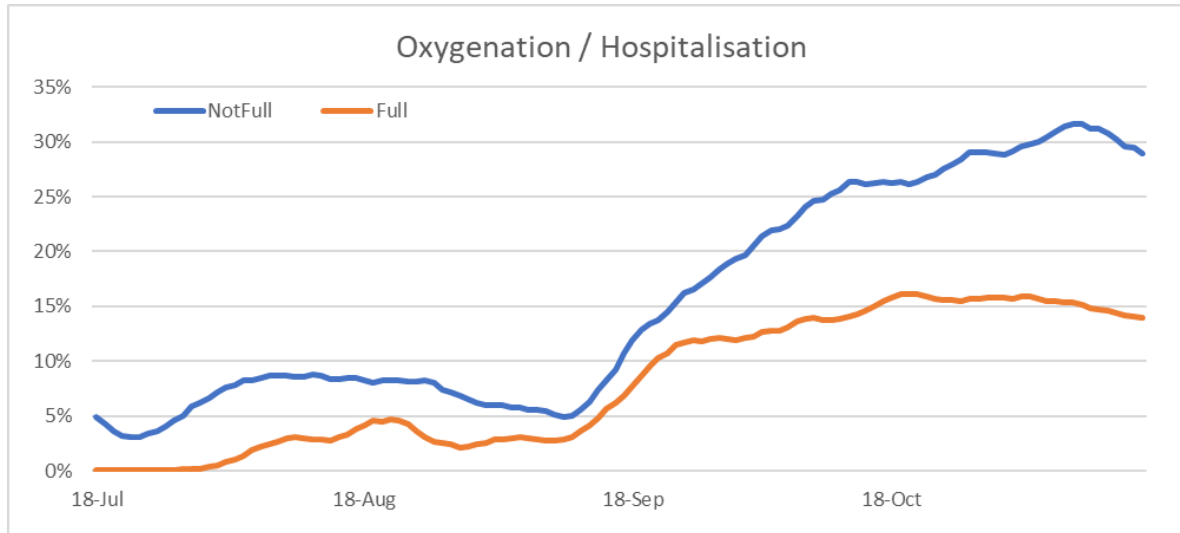
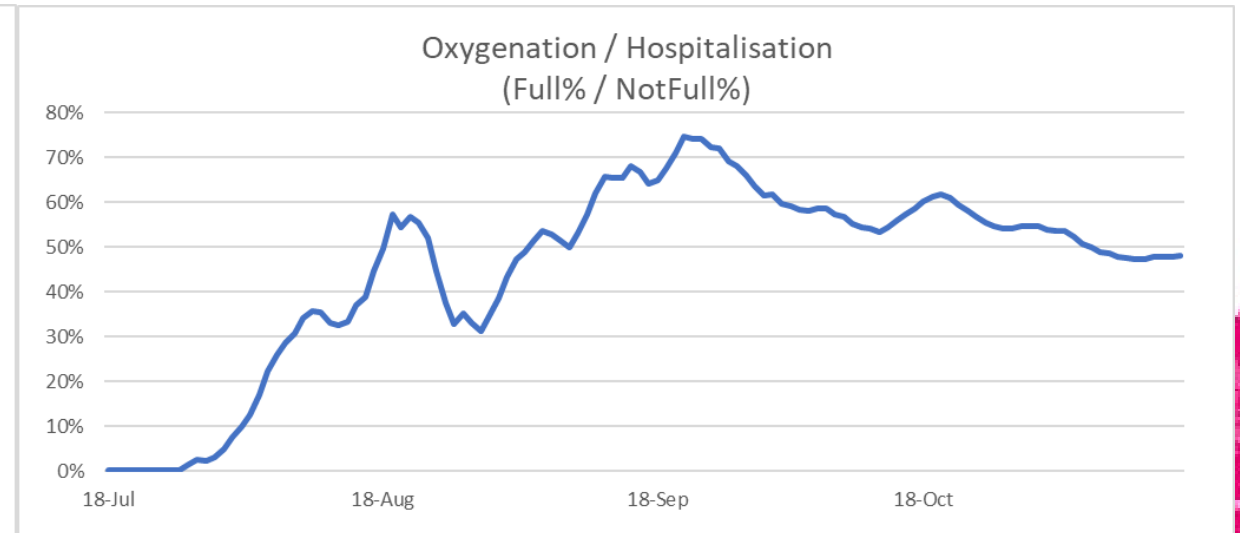
Vaccines having a significant impact on Severe Illness...



Vaccines – The Data Is In



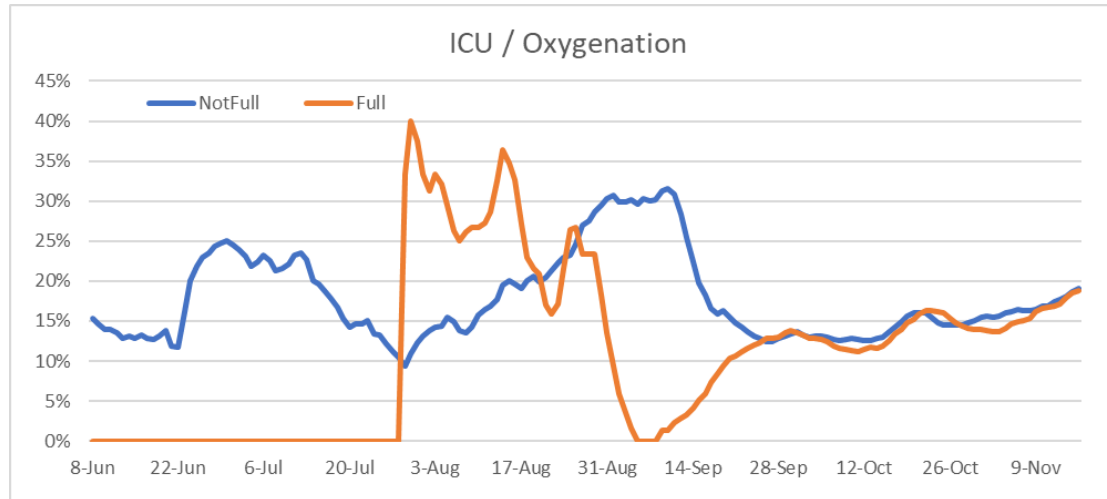
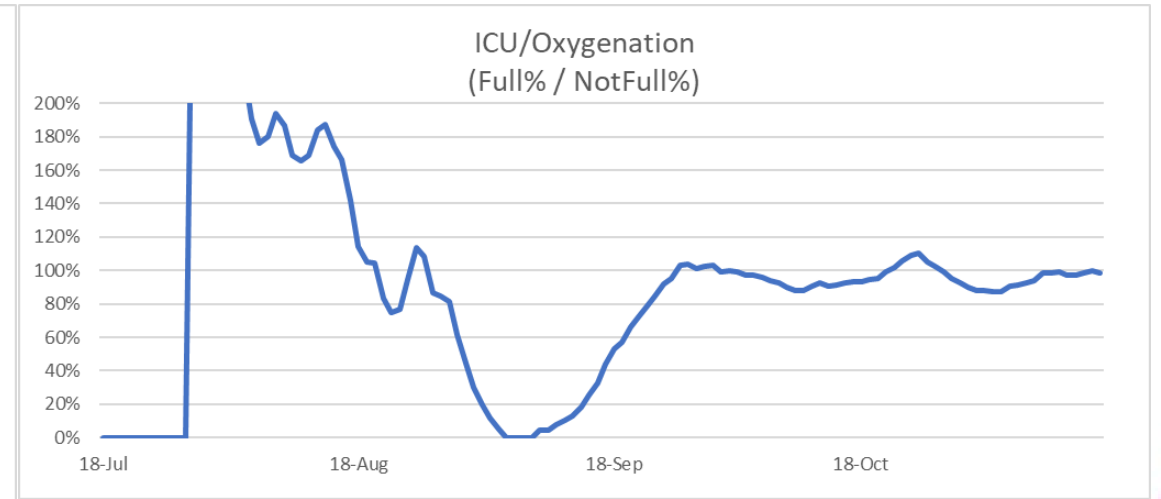
Vaccines having a significant impact on Severe Illness...



Vaccines – The Data Is In



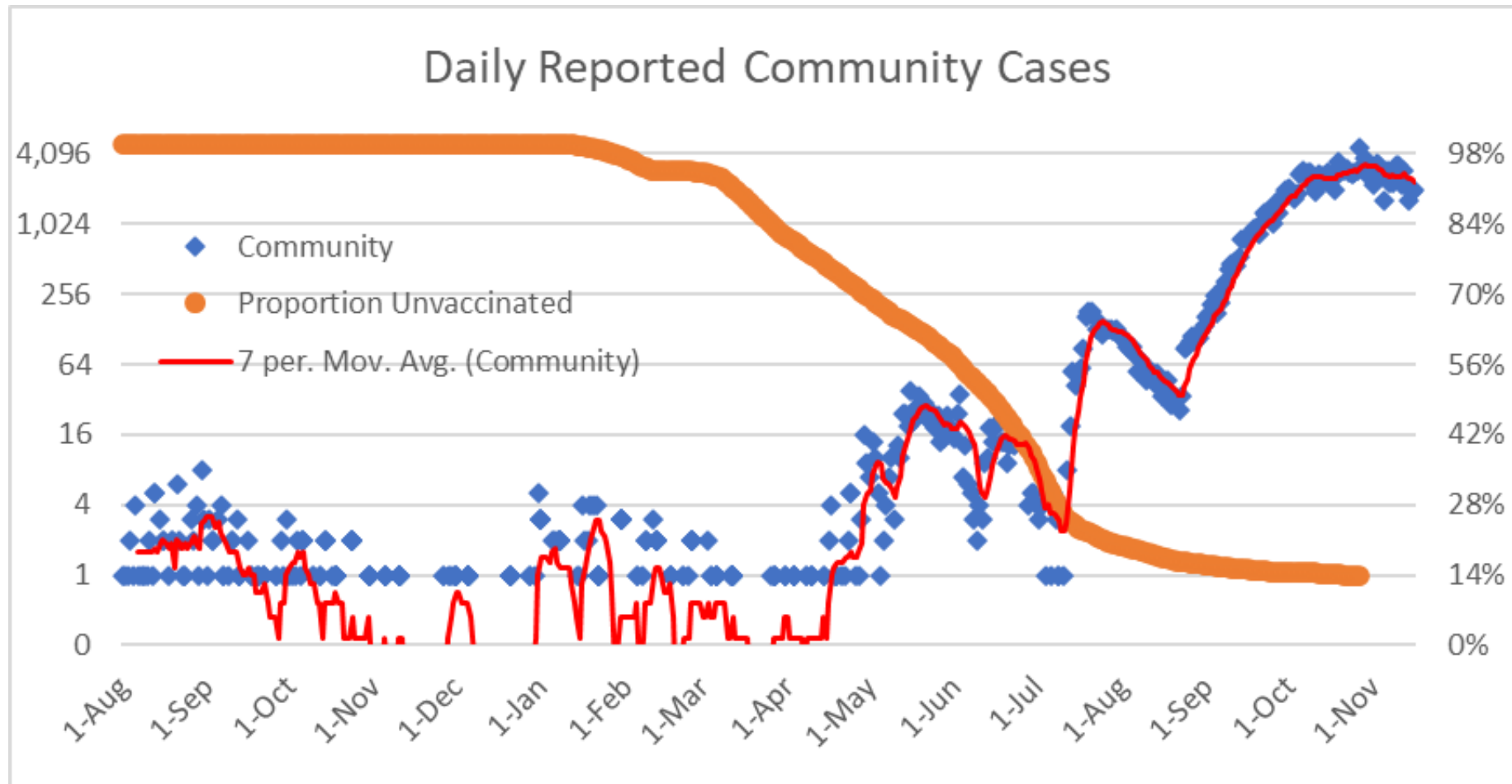
Vaccines having a significant impact on Severe Illness...



Vaccines – The Data Is In



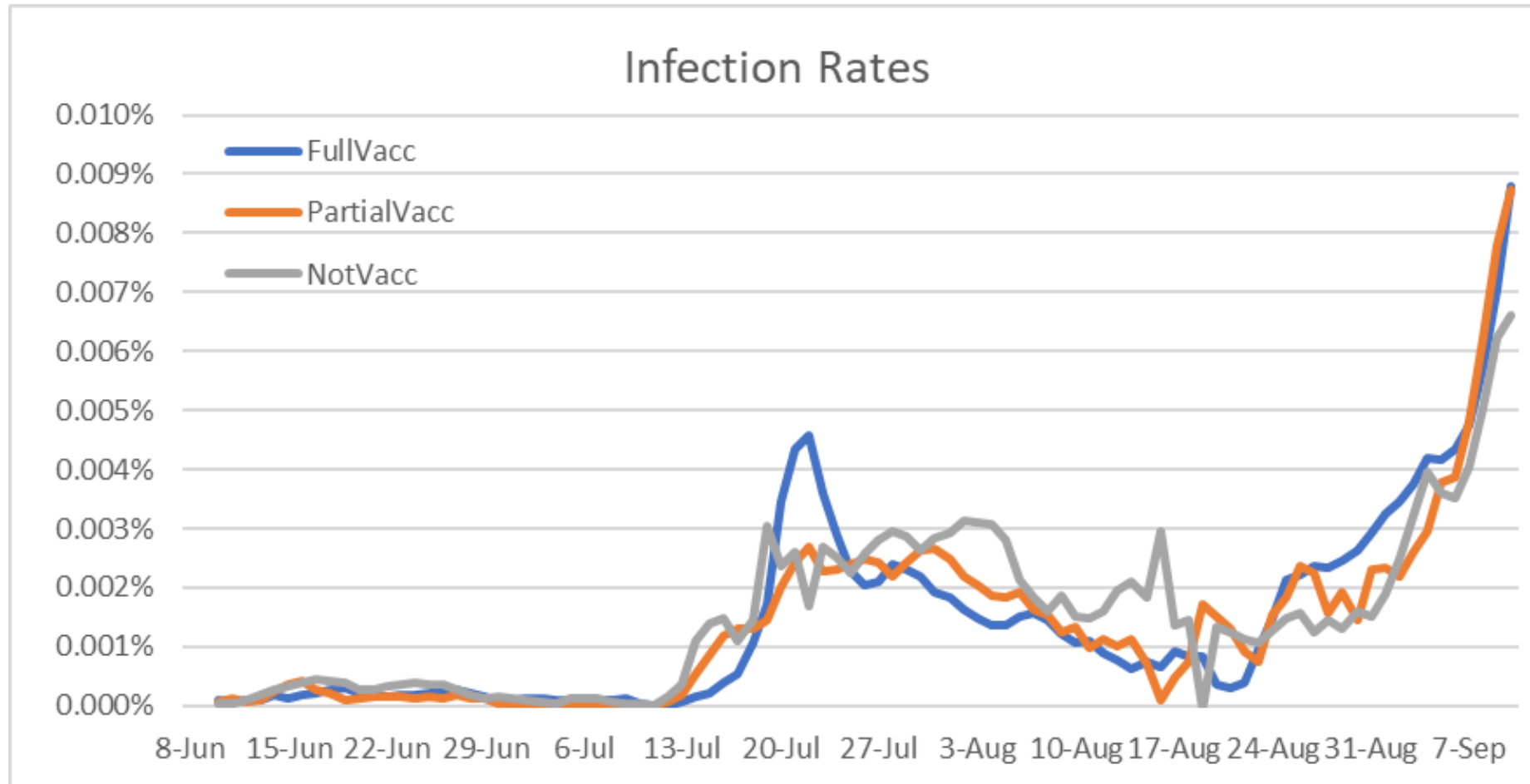
... but less of an impact on testing positive.



Vaccines – The Data Is In



... but less of an impact on testing positive.



Vaccines – The Data Is In



International experience is mixed

THE STRAITS TIMES

WORLD

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UK study finds vaccinated people easily transmit Delta coronavirus variant in households



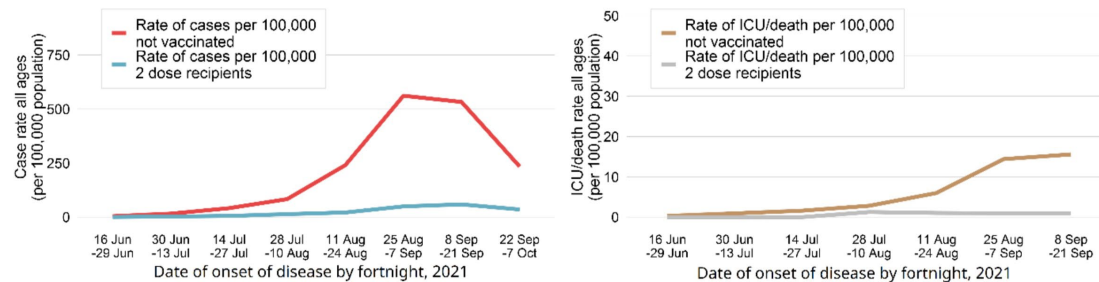
Top Stories Latest News Discover Singapore Asia Commentary Sustainability CNA Insider Li

RISK REDUCTION OF HANGING OUT WITH A VACCINATED PERSON

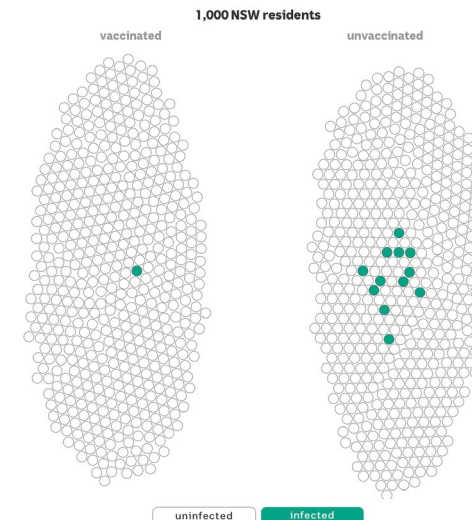
Recent reports from the Victorian Department of Health find that unvaccinated people are 10 times more likely to contract COVID-19 than vaccinated people.

COVID-19 case rates by vaccination status

Rate of COVID-19 cases and ICU admissions/deaths amongst two dose vaccine recipients and the population who had not received a vaccine by fortnight[†]



Notes: Population and cases restricted to 12 years and older resident in Greater Sydney.

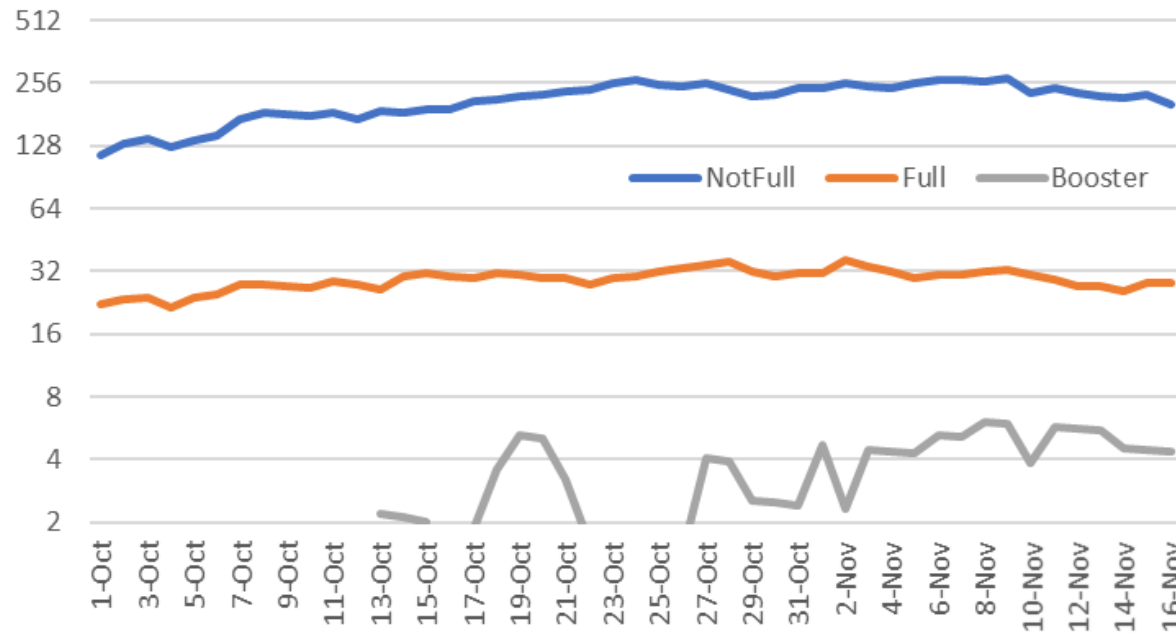


Vaccines – The Data Is In

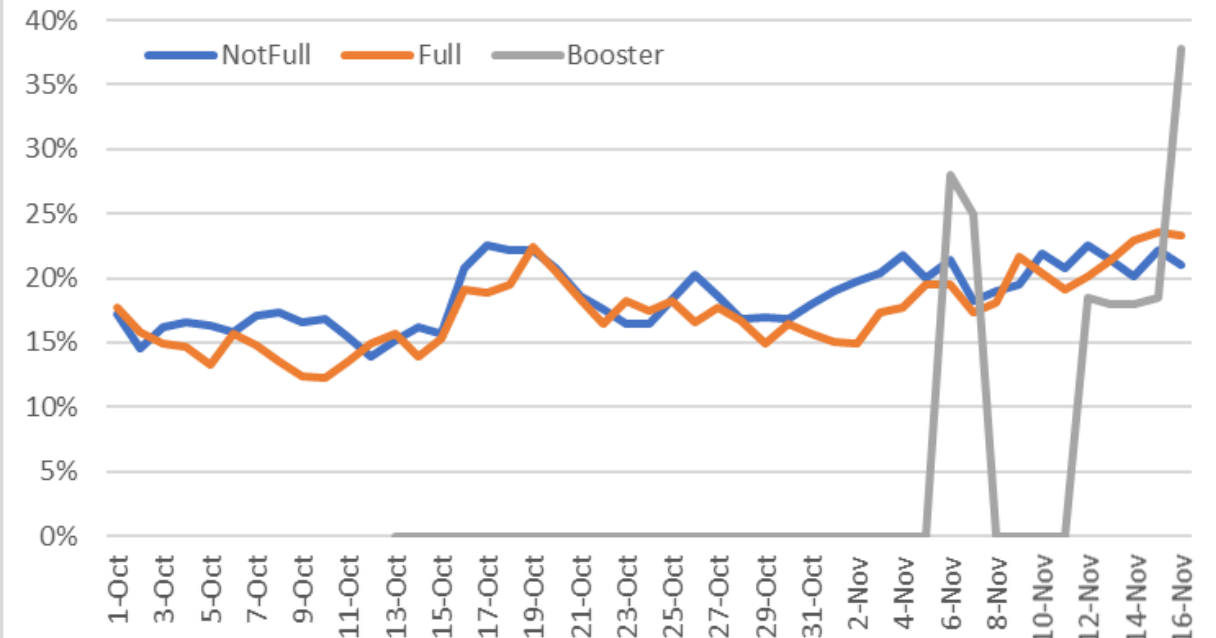


Boosters – The Next Phase

Requiring Oxygen per 1m Population

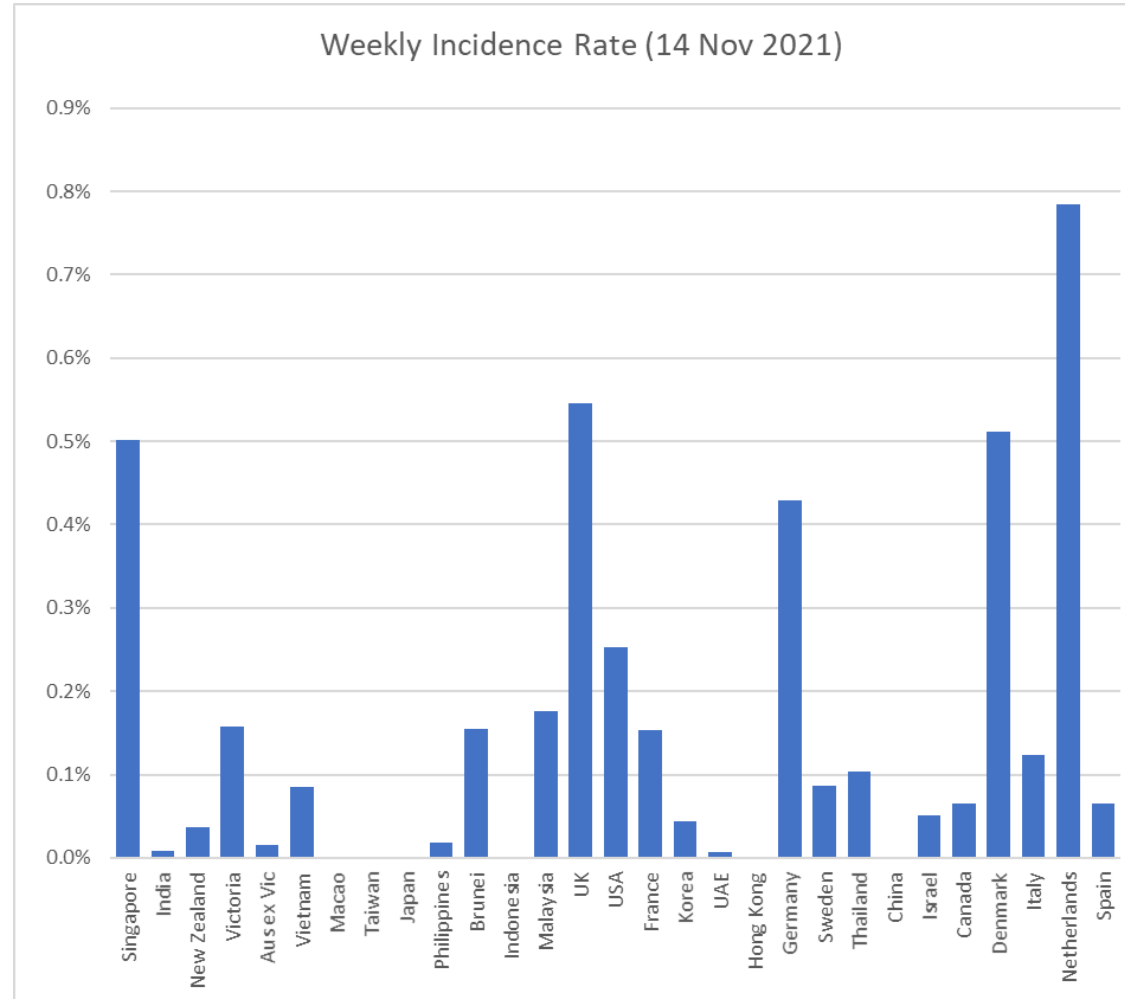


In ICU per Oxygenation Case





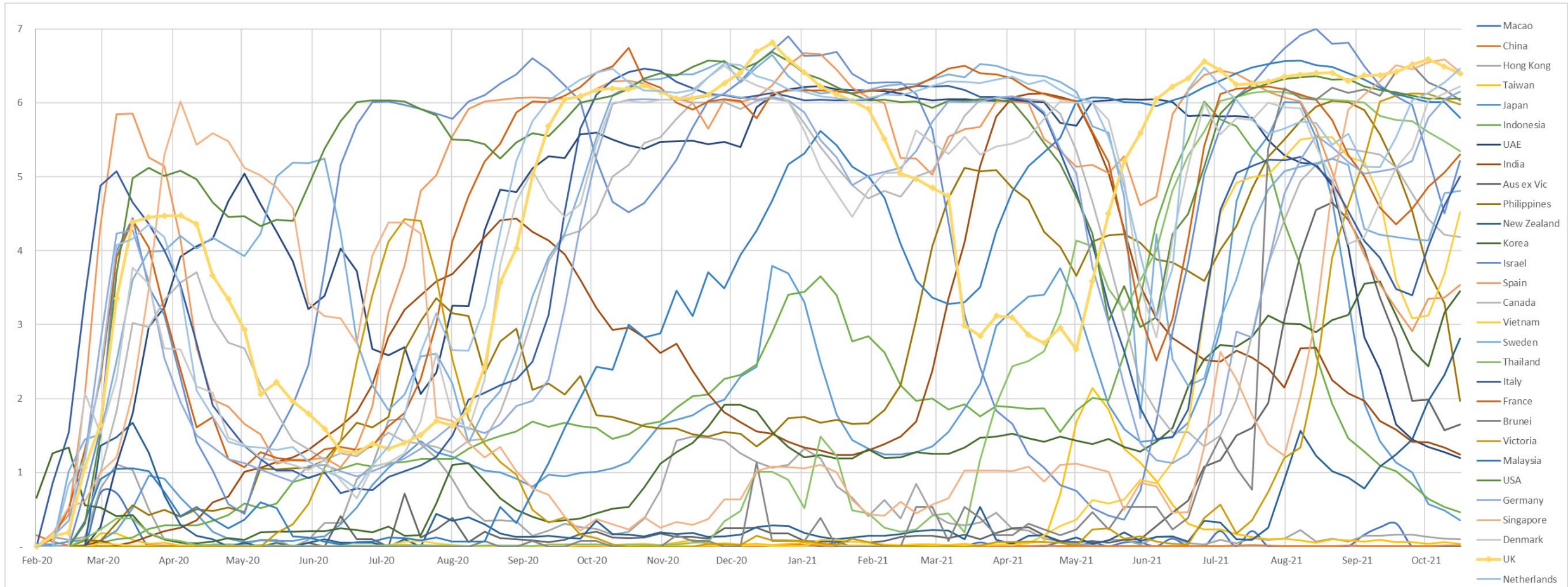
Weekly Case Numbers (Frequency)



Global Experience



Lots of Variation across Countries



Relative Incidence Rates

Global Experience



Lots of Variation across Countries

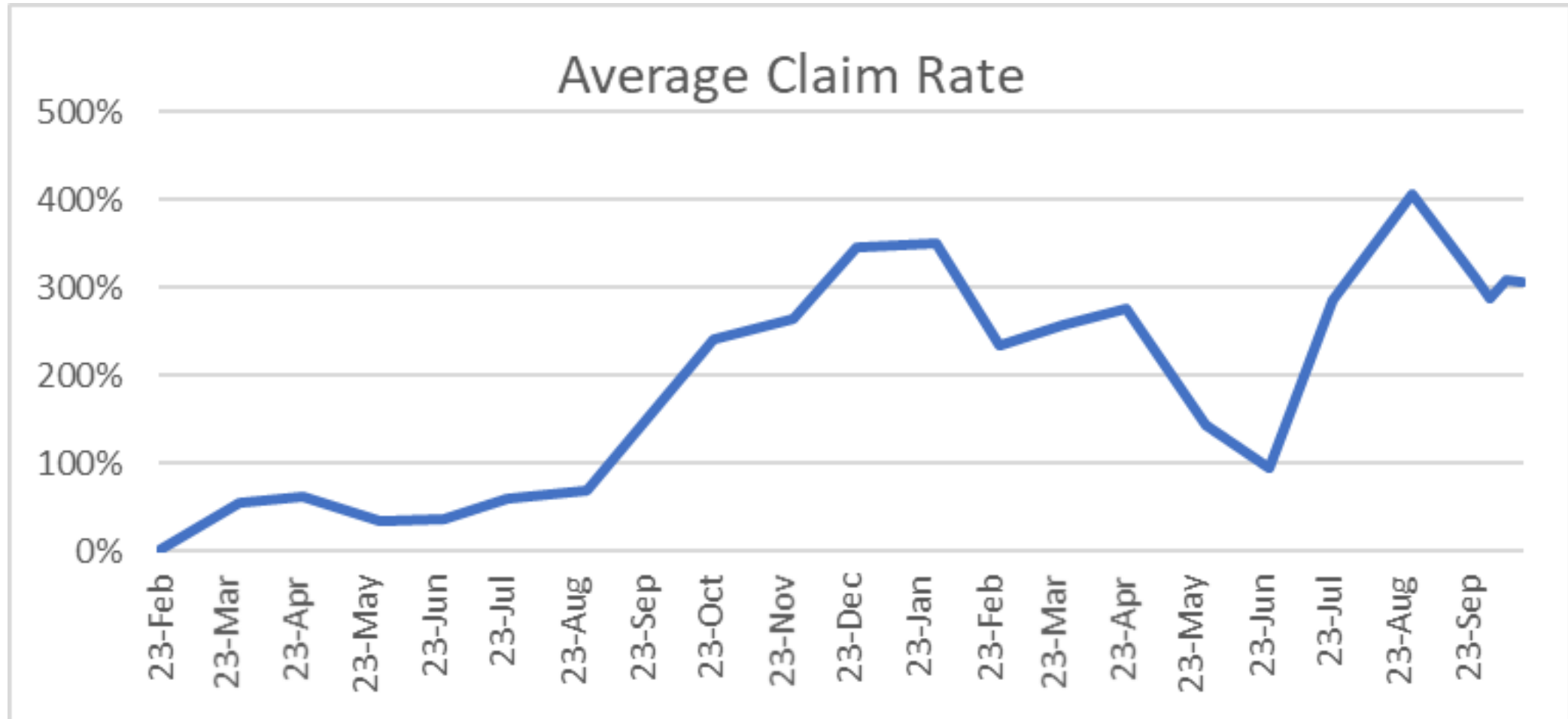
All	Minimal	Very Low	Low	Central	High	Very High	Extreme	Total
Minimal	97%	3%	0%	0%	0%	0%	0%	100%
Very Low	5%	84%	9%	1%	0%	0%	0%	100%
Low	0%	21%	55%	23%	1%	0%	0%	100%
Central	0%	2%	18%	55%	23%	2%	0%	100%
High	0%	1%	2%	19%	52%	25%	0%	100%
Very High	0%	0%	0%	0%	14%	68%	18%	100%
Extreme	0%	0%	0%	0%	0%	10%	90%	100%

Weekly Movement

Global Experience



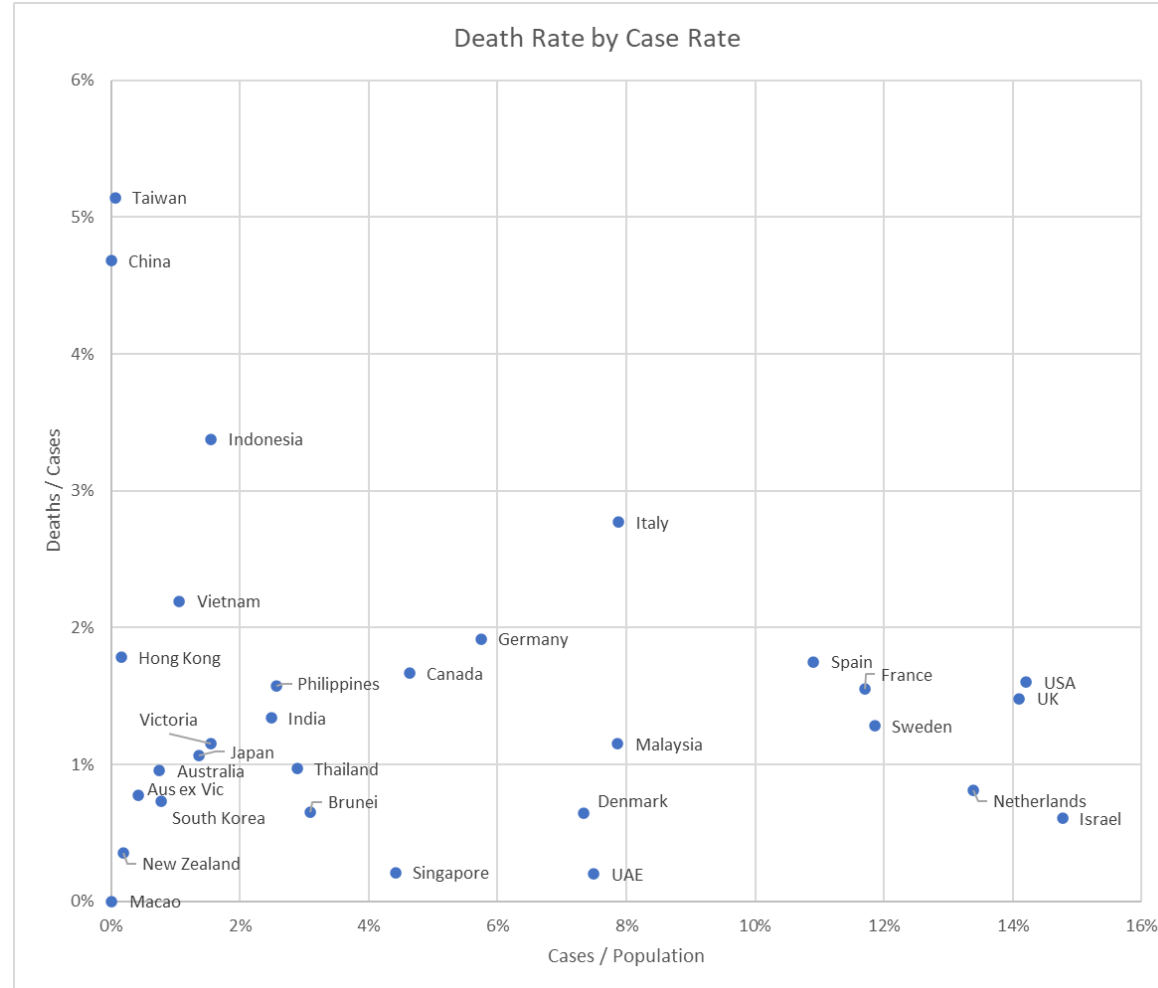
But generally an upward trend



Relative Incidence Rates

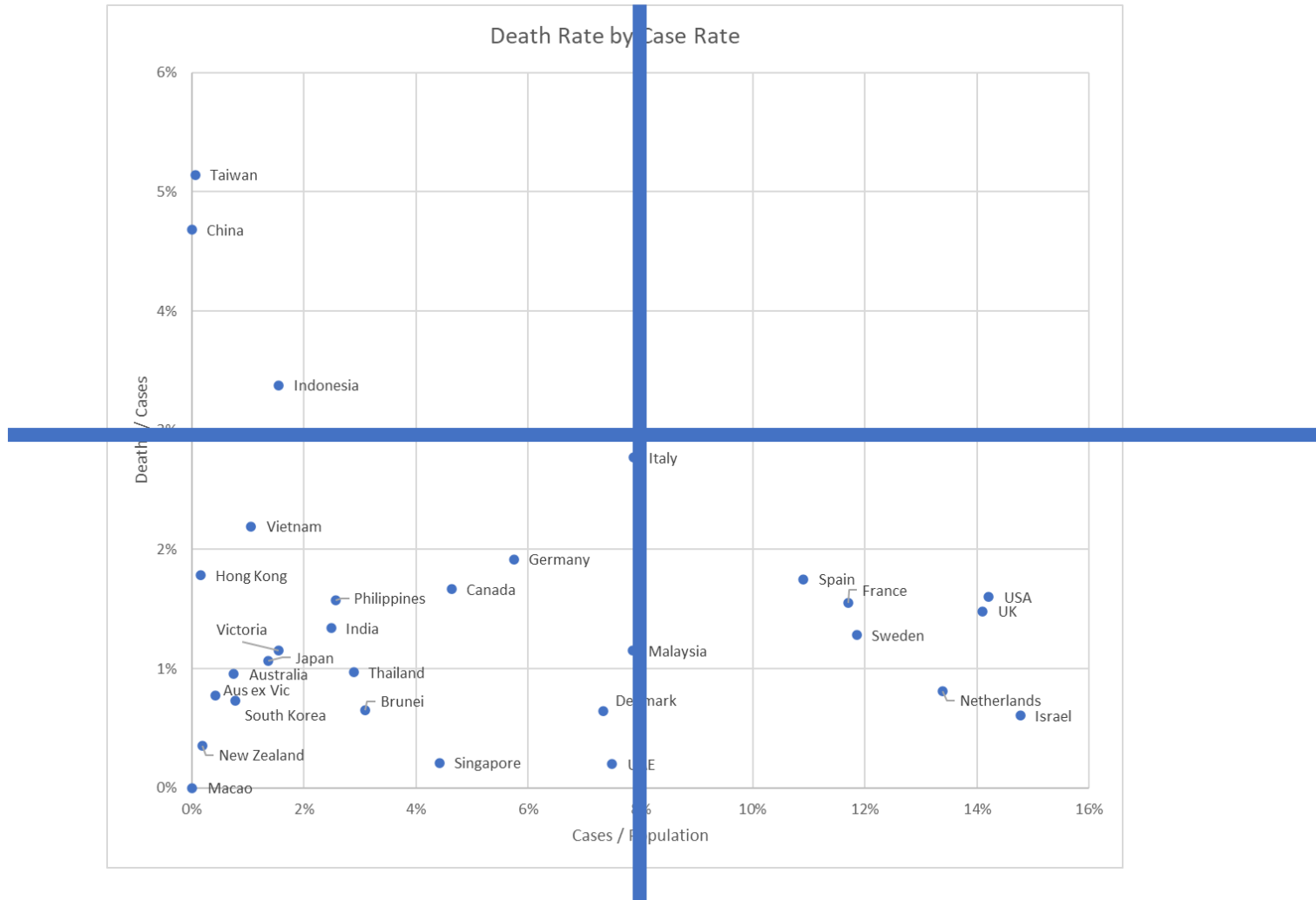


Frequency vs Severity (Death)





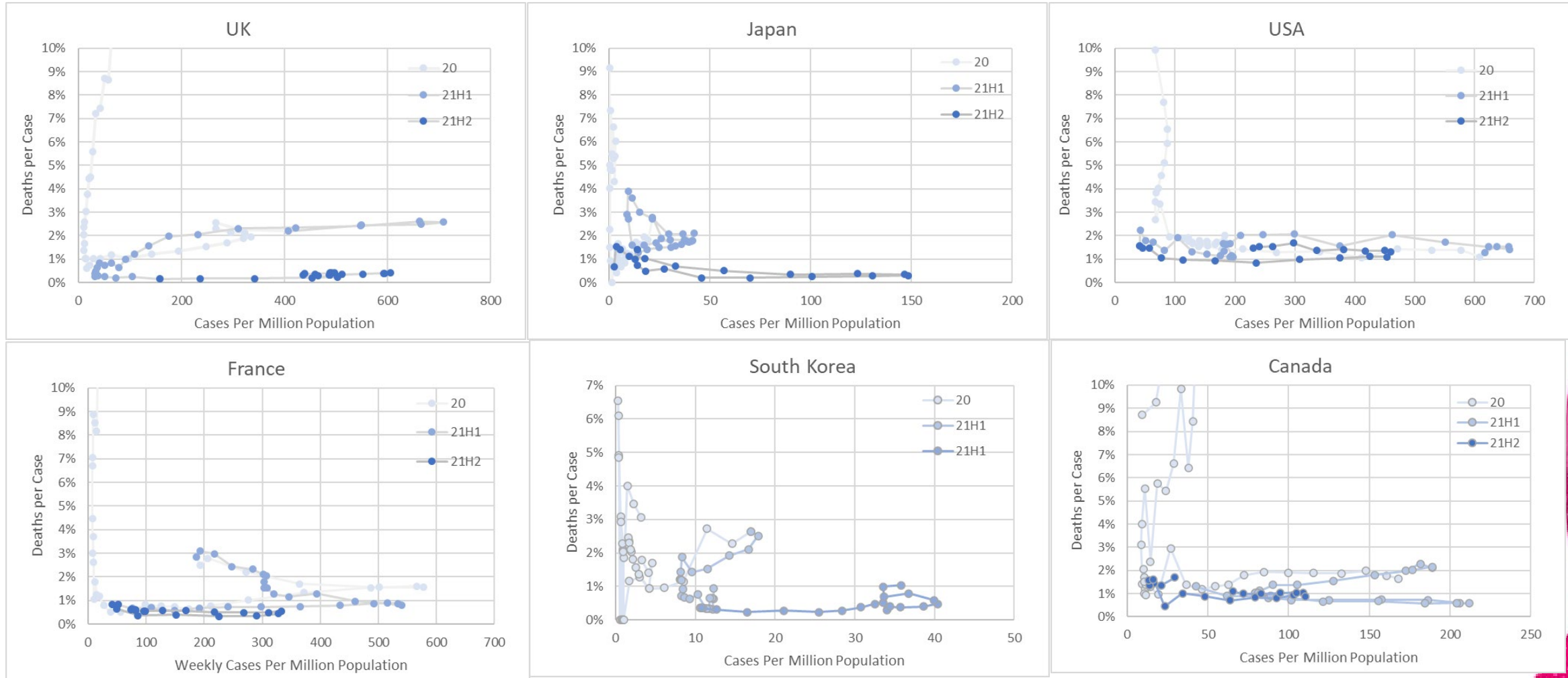
Frequency vs Severity



Global Experience



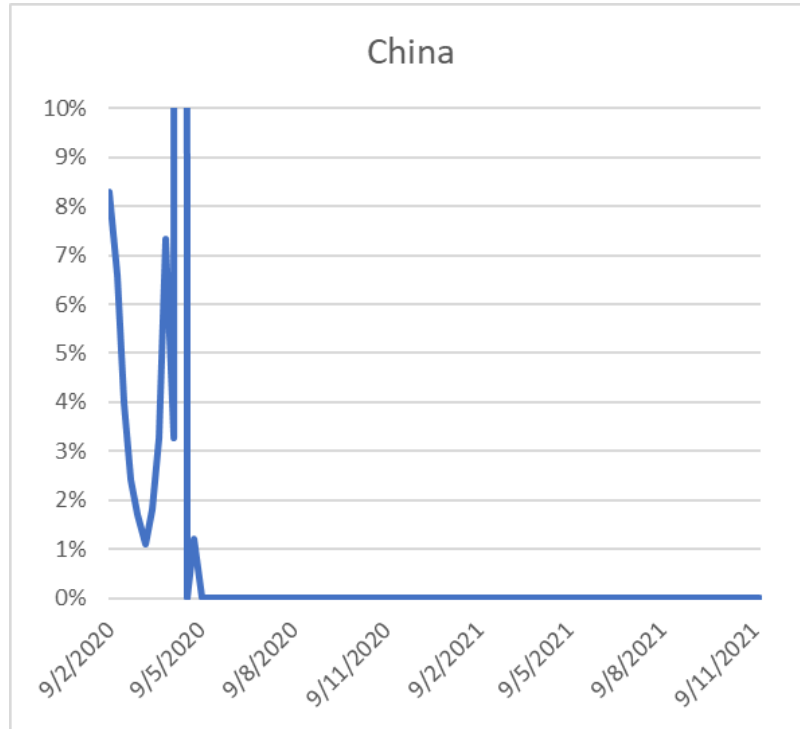
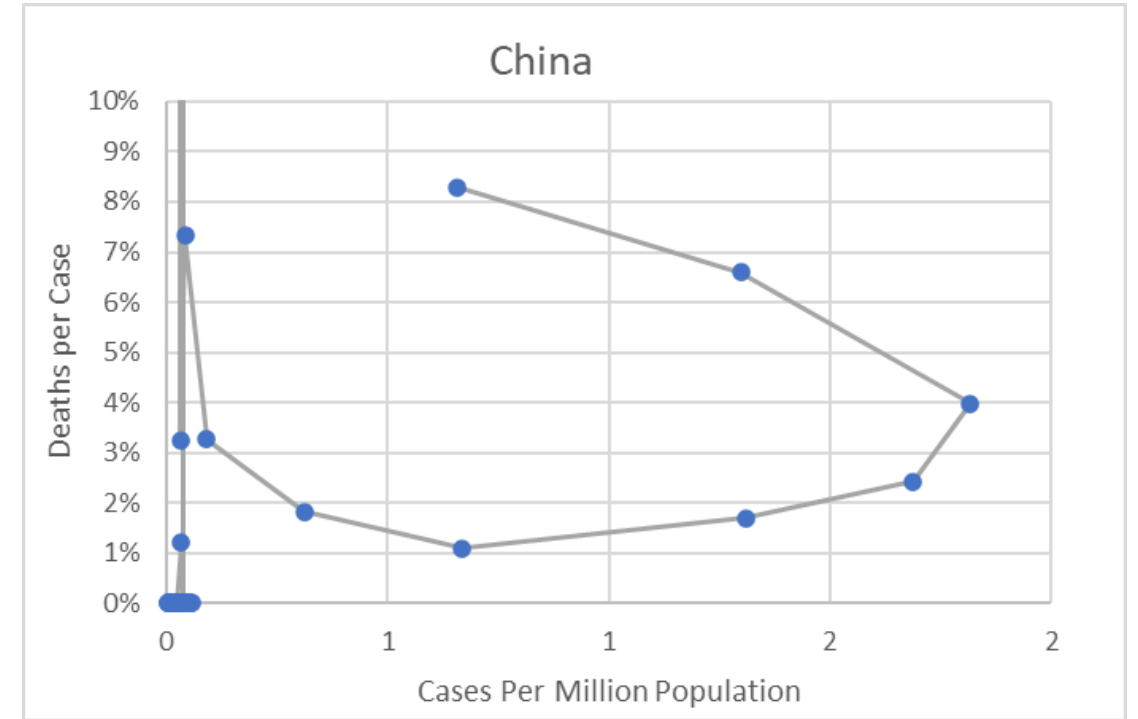
No trend between Number of Cases and Death Rates



Global Experience



Special Mention:



Implications



-  Risk differentiators (Age, Vaccinated)
-  Dynamic – Experience can change rapidly
-  There is data – but it's not always consistent
-  Do Vaccines protect 'Others'?
-  What is the way out?

Implications



A new normal with a new language?

VDS

PET

HQO

HRW

ICU

MTF

PCR

LOA

RSC

CCF

ARI

WFH

CTF

SMM

ART

VTL

RRT

HBL

SHN

SMM

EUL

NVP

HRP

Implications



A new normal with a new language?

VDS

PET

HQO

HRW

ICU

MTF

PCR

LOA

RSC

OMG!

CCF

ARI

WFH

CTF

SMM

ART

VTL

RRT

HBL

WTF?

SHN

SMM

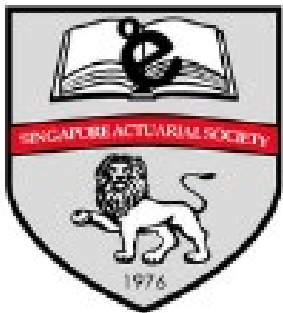
EUL

NVP

HRP

Singapore Actuarial Conference

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Singapore's Covid 19 Experience

Beyond the Headlines

Thank You



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